HARVARD BUSINESS REVIEW

OCTOBER 1922

VOLUME I
NUMBER 1

ESSENTIAL GROUNDWORK FOR A BROAD EXECUTIVE THEORY

By WALLACE B. DONHAM

"The gipsy in Asia Minor makes iron nails one at a time with a hammer on an anvil, just as his ancestors did before him for hundreds of years. I have seen him doing it; but I also observed that his small children were stark naked and that his larger ones had only one garment . . . . . In industry and commerce all things are become new."

CHARLES W. ELIOT

UNLESS we admit that rules of thumb, the limited experience of the executives in each individual business, and the general sentiment of the street, are the sole possible guides for executive decisions of major importance, it is pertinent to inquire how the representative practises of business men generally may be made available as a broader foundation for such decisions, and how a proper theory of business is to be obtained. The theory of business, to meet the need, must develop to such a point that the executive, who will make the necessary effort, may learn effectively from the experiences of others in the past what to avoid and how to act under the conditions of the present. Otherwise, business will continue unsystematic, haphazard, and for many men a pathetic gamble, with the failures of each serious business depression made up largely of the best moral risks.

No amount of theory can be a substitute for energy, enthusiasm, initiative, creative ability, and personality, nor will it take the place of technical knowledge. Now, however, all of these personal qualities may be coupled with an adequate technical equipment, and yet the executive of wide experience may fail through our inability to grasp the broad underlying forces controlling business, a knowledge of which would give a sound basis for judgment. It is a serious criticism of our business structure that it so long lacked an adequate method by which these broad forces may be appraised, their probable course charted, and their applications to individual executive problems made reasonably clear.

The Importance of Business Precedent

The need of a better theoretical basis for executive action exists in all lines of industry. Business decisions are now gov-

erned by the precedents and practises current within each particular industry to an extent which makes these precedents almost comparable in weight with the precedents in the law. The inertia with which any large corporation or any individually managed business opposes a departure from the habits, customary practises and precedents of that organization is well recognized. These precedents and practises are of various types. Within each industry competent leaders study their management problems constantly and each manager creates many precedents and practises which are the basis, consciously or unconsciously, of his own decisions. Precedents of this type are limited mainly to the industry of which his concern is a part if they are not wholly personal to his company.

One of the assets which an employer always has in mind when he engages a new executive from another company in the same industry is this background of personal experience, upon which he relies for the improvements to be accomplished through the newcomer. In addition to the localized precedents within each concern there is an increasing tendency for the interchange of such precedents among competitors and each industry as a whole thus tends to create within itself a structure of traditions which largely control the executive action taken in that industry.

Business Precedents Limited to the Particular Industry

It is still true, however, that each industrial group learns and benefits little from the experience of other groups. An international banker discussing the subject recently, referred to the fact that American business men typically know nothing of any business but their own as their most serious limitation in international competition and in their approach to current reconstruction problems. The recent economic disturbances culminating in the business depression 1920-21 afford complete and disconcerting evidence of the widespread ignorance of the economic background of business in its application to particular industries and especially of the lack of any adequate concept of the relation between the business cycle and individual executive problems. The work of the Harvard Committee on Economic Research was at this time so recent that few executives knew of its existence and fewer still had confidence in its forecasts.

The big swings of business occur perhaps once in a business generation. The new generation of managers, as it approached the conditions of 1920, had great need for records in usable form of the experiences of 1893, but no such records exist. With striking exceptions in the case of individuals who had been students of economics and were able to apply their economic background to the problems faced in 1919-20, many of the most able and energetic industrial managers met with maximum difficulties during the current depression. In many cases also the more stodgily managed concerns are today in better condition than their energetic rivals.

The premium on the lack of initiative at certain stages of the business cycle can be removed only by adequate business records of widely differing types, from which may be developed theories and precedents for use by the executive. This business generation owes it to its successors to make such records that the new generation may approach the problems of some later depression with a background of proper information. Business needs not less theory, but much more.

Failure of Business Men to Benefit from the Work of Economists

The business cycle is perhaps more important to business men than any other phase of the economic background and economists have been for many years working on its phenomena. Notwithstanding this fact, business men were almost wholly unprepared for the depression of 1920. The difficulty is that the studies of

the economist had not generally been carried far enough into the executive problems of specific industries for the executive to use the results in his own business, and much more work has yet to be done before these results will be fully available. Each executive always feels that his own business is different from others. To a certain extent he is right, for the broad economic forces affect different industries with varying intensity and at different times, but no industry is immune from the operation of these fundamentals. This feeling on the part of the executive that his business is different can be offset only by economic studies made from his standpoint, which are developed to the point where each manager may see how his business is in fact affected by these forces, and may understand the relation of his particular industry to other industries.

The business man customarily feels that economists are too theoretical and have little to offer which is of value in his business. Consequently he minimizes the importance of their work. To some extent this feeling on his part has been justified. The slender resources of the economist have been inadequate to enable him to gather the type of data most valuable to the business man,[1] and the economist's point of view is social while the business man's point of view must be primarily individualistic. This difference between the social and the individualistic interest affects even the form of the economist's work, while its substance has generally been in fields well separated from those in which the business man must find the basis for his decisions. The failure of correlation between the business man and the economist arises also from certain inherent limitations in the intellectual training of the typical business executive. Inasmuch as most of the economists' efforts deal with problems whose solutions are not directly applicable to business, the business man has usually failed to learn the language of the economist. There is a resulting lack of understanding of economic work which makes it difficult for him to appreciate its value.

Whatever the reasons for the condition, there are few connecting links between these two groups, and the work of the economist is not guiding the action of business men to the extent that it should. This is true of different types of industries in different degrees. The banker, with an adequate economic training, finds the point of view of the economist close to that required for his most important executive decisions. He can, if he will, get much value for the conduct of his business out of this economic training and out of current economic thought. The banker deals with considerable groups of industries and is obliged to consider conditions which affect them all. His mental processes are less special and nearer the social point of view of the economist than is true of other business men. On the other hand, the manufacturer is rarely interested in economics except as he may be irritated by a difference of opinion on some national issue, or as he feels that they overlook the essentials of some practical operating problem, for example in labor relations. He finds little in the work of the economist which he understands and less than he can apply in his own business. The economist has not carried his work near enough to the executive problems of the manufacturer to make it readily available. So far as each manufacturer can see, his business is in fact different from others.

Need of Standards for Executive Decisions

Industry also needs theoretical development of another type. Every executive is today handicapped by lack of information as to the methods by which other executives solve internal executive problems similar to his own. The accountant has built up a basis for gathering facts for use as precedents and background for many decisions of this type, but almost univer-

[1] See Bullock: The Need of Endowment for Economic Researeh, *Harvard Graduates Magazine*, June, 1915.

sally accounting data are limited to one concern. Recently there have been devised a few standard accounting systems applicable to whole industries and, when comparable figures are collected through the use of such systems, the information so made possible will give an industrial rather than an individual basis for action. This movement as yet has only a start outside of railroads and public utilities, and while accounting methods remain in the present unsystematic and unstandardized condition, the opportunities for using accounting data to create standards and precedents are almost wholly limited to each particular concern.

The technical and semi-technical problems of the major industries have for many years been subjected to serious study by engineers and managers, and while revolutionary changes affecting technical methods will result from the constant advance in the sciences, this side of business management is already far more scientific than the non-technical side. The greater advance in technical theory should be credited in part to the fact that the engineer must generally leave records in a form which can be observed and used as precedents by other engineers. For example, layout problems, well solved in one plant, become with the growing conception of unity of interest within industries both valuable and available for the use of others in the same industry. Technical development alone, however, is an unsound foundation for the successful conduct of any business, and unfortunately the well worked out analyses and solutions of non-technical executive problems are not similarly recorded. They fail therefore to spread from one company to another and from one industry to another, as they should. This is true notwithstanding the usefulness of information affecting industry generally or particular industries as a whole, such as trade statistics, price series, wage data, interest rates, census reports and other data published by private and governmental agencies, which exist in considerable volume.

In a few limited fields there is already, through existing publications, an exceptional basis for executive action. Such services as Moody's Manual furnish standards of great importance in the fields of public utilities and railroads. Here both accounting and operating conditions are standardized and the technical and non-technical problems are similar. The student of a particular utility or railroad may, from the data recorded in such manuals and in the Interstate Commerce Commission and similar reports, form an excellent impression, easily supplemented by personal investigation on the ground, of the essential characteristics of a company investigated. On the other hand, while similar information in the industrial volumes of these manuals is significant, it is less valuable than the information about railroads or utilities. No standards either of accounting or of operating conditions exist as to these miscellaneous industries and there is infinite variety of technique. Moreover, the effect on such companies of fluctuations in commodity prices and other operating conditions is much more marked than in the case of utilities, and the intervals between periods when information is given are so long that no effective check on conditions is obtained. Most of the recent difficulties which the investment banker has met in dealing with industrial securities arise out of considerations of this nature, which affect the validity of conclusions drawn from the ordinary data.

While the exchange of experiences among different concerns, except as one hires the employee of the other or as they compete in buying and selling, is very recent in its development, the tendency in this direction is a factor of much importance for the future of business methods. Every executive must have noted the marked difference in this regard in the last 20 years. Trade secrets of a non-technical nature have ceased to exist in many well-managed plants, where 20 or 25

years ago it was difficult for the manager of a competing concern even to visit. Such interchange is today generally possible and expected. Whether this change in attitude should be attributed to the disclosure of facts brought about by income tax and similar governmental returns is for the present purpose immaterial. A revolutionary change in attitude has in fact started within the last generation. This change for obvious reasons is so far almost entirely limited to particular industries, for most of the interchange has been accomplished through trade associations and through personal contacts which are largely within each trade.

On the other hand, the amount that each industry has to learn from the practises and precedents of other industries apparently far different in character is only just coming to be realized. Trade associations and business men's organizations of various types have done something to improve conditions in this respect and organizations like the National Industrial Conference Board have made substantial beginnings in studies which are of interest to many industries. At the best these instances are exceptional. While in a few fields beginnings have been made through research, out of which much may be expected in the future, scientific standards for comparative tests of business efficiency do not now exist, and managers in one industry learn little from managers in other industries.

The Scientific Method and Business Theory

In substance the theoretical background for business stands today somewhat where the law in England and France stood in the period from 1200-1300. In both countries the law was local to small territorial units. This corresponds to the present condition of business precedents and practises which are local to particular industries or companies. To a considerable extent also the decisions of the courts were based upon customs and upon the memory of each judge as to his own past practises. The present scientific development of law is an outgrowth of recorded legal decisions which have since 1195 in England,[2] and approximately 1252 to 1271 in France,[3] formed the background for the study of legal problems.

All the pure and applied sciences of the present day have developed in the same manner. Before the scientific method came into use, the astrologer and the medicine man created fantastic hypotheses to account for the phenomena of nature. Sun, moon and stars ceased to be the subject of absurd and fantastic notions and were recognized to be under the influence of laws controlling their ordered movements only after Copernicus, Keppler and others conceived the idea of recording and collecting systematically over a considerable period of time the facts about their movements. It was then possible to classify these facts in series and sequences, and to develop from these records and classifications laws or theories which not only explained the present but gave a method of predicting the future.

Methods of research in science vary as widely as technique in business, but while the technique of research varies, the conception that scientific studies should be approached through the collection and classification of facts and through the development from recorded facts of generalizations and theories into which the facts fit, is the basis of all science. This method has been applied with great effectiveness to such fields as the law, which lack the exactness of natural sciences. In this respect business resembles the law more than the natural sciences, and therefore the probable course for the development of theory in business is more analogous to the similar development of the law than it is to chemistry or physics. It will require, how-

[2] Pollock and Maitland: *History of English Law.* Vol. 1, p. 169.

[3] *Continental Legal History Series.* Vol. 1, Part III, page 224.

ever, the applications of the same scientific method.

The Analogy of the Common Law

The earliest treatise on the English law and customs was written by Glanvill, or one of his associates who was familiar with the practises and customs of the law, before the year 1189. Glanvill himself was a judge. The writer of the treatise, whether Glanvill or his associate, relied on memory and on his knowledge of the practises of the court. Since no records of court proceedings at that time existed, his work was empirical in nature and inevitably lacked a scientific basis. To considerable extent, the writer of a business treatise finds himself today in the same position. In the absence of recorded facts in the field about which he wishes to write, he must rely upon his own memory and judgment and upon second-hand information obtained from business men as to their memory and experiences.

Curiously enough, immediately following Glanvill we find an early application of scientific method to the determination and development of legal theory. The first treatise of real importance in the English law is not Glanvill, but Bracton, written about 1250-1260. Bracton's personal history has an interesting bearing on the subject under discussion. He was first a clerk and later a justice in the Court of the King's Bench. In 1195 this court had begun to compile systematic records of its proceedings—the rolls of the court. These rolls, which are the earliest court records in European law, were not available for general study by attorneys in the modern way, but in some irregular manner Bracton appears to have obtained possession of rolls constituting the record of about 25 years of proceedings mainly before two judges (Pateshull and Raleigh) who preceded him. While he was using these rolls in work on his treatise, he appears to have fallen into disfavor and was ordered in 1258 by the authorities of the Exchequer to return the rolls to proper custody. As his treatise was incomplete, this order embarrassed him greatly, and, gathering together a group of men who could write, he had them hastily copy from the rolls some 2,500 cases which seemed to him representative of the law and therefore necessary as the basis for his book. This collection of cases in various hand writings has come down to the present time and is known as Bracton's "Notebook." It antedates Dean Langdell's "Cases on Contracts," the first modern collection of selected cases in the common law, by approximately 750 years. With this notebook as his material for the scientific study of decided cases Bracton worked out a treatise, which is the beginning of the modern development of the common law.

In the treatise he cites from 400 to 500 cases out of his "Notebook," and these citations probably constitute the first use of decided cases as precedents.[4]

It is obvious from the mere statement that no systematic national law and no theoretical development of law was possible until court records were systematically kept.

---

[4] For a general discussion of the legal history of the period, see Pollock and Maitland, *History of English Law*, Vol. 1, Chaps. VI and VII, and for a briefer discussion, Lee, *Historical Jurisprudence*, Chap. XVI.

Lee even finds in Bracton's treatise the first statement of the doctrines of *stare decisis* under which a common law principle once decided, even though it be wrongly decided, has behind it a weight of authority which makes the court very unwilling to change its position.* It occasionally seems that this doctrine, which has differentiated the common law from the French law, has less weight in this country in recent years than formerly, particularly in some of the fields of constitutional law and federal legislation. In France, the nationalization of the law and its development out of the stage of local territorial customs had its beginning after court records were established in about 1252. The French law developed through codification, but this codification not only failed to stop the development of judge-made law, but to a controlling extent the codes themselves were based on judge-made law. Moreover, while in theory the French court is not bound by precedents, in practise the controlling character of precedents is an inevitable element in the development of even code interpretation. No judge can approach an old problem without giving weight to the conclusions he reached before and with the publication of decisions these precedents rapidly became more and more important. The judge found his labors much decreased by the precedents, while the attorney desiring to know the probable future interpretation of the code obtains his best guide from the interpretations in earlier decisions. Judge-made law, therefore, is little less important in the civil law than in the common law, although the approach in theory is different.

Professor Beale points out the fact that codification has not served to reduce the necessity for judicial decisions and that litigation on points of law under the civil code of France exceeds in amount the litigation of a similar nature under the common law in the British Islands.†

* Lee: *Historical Jurisprudence*, p. 490.

† *Selected Essays in Anglo-American Legal History*, Vol. 1, page 565.

When we consider that every large business finds its current decisions greatly influenced by the memory of men within the organization and by the precedents of that particular business, while it has little opportunity to benefit from the experience of other concerns in the same industry or from the practises of other industries, the close analogy of present business conditions to the early stages of the development of the law in the time of Granvill is apparent. If progress in the development of theory in business, like that which took place in the law after Bracton, becomes possible, it will be because there has been provided a basis in recorded facts similar to the court decisions. Such facts alone can give a wider and more scientific background of experience and bring about a broader use of the precedents and practises of business as a whole.

Types of Research Necessary for Development of Theory

For such an application of the scientific method to business theory we need only to extend to their logical conclusions existing methods of research. Much of the material referred to which is published by private and governmental agencies needs further study and classification, both from the economist's and from the executive's point of view, before it can be of maximum value. More has been done with this material from the social or economic point of view than from that of the executive, and before the business man can get full benefit from it the coordinations must be worked out and the results must be studied and stated in specific forms planned to help in the solution of individual business problems. But much more material than is now in existence must be collected before the desired results can be obtained with any fullness.

The creation of mass data covering a whole industry is beyond the means of any research organization which lacks the support of the taxpaper, and if this type of research were the only method of obtaining an adequate view of the activities of an industry, the expense would be prohibitive. Where mass data are not available from government sources substantially the same results can in many cases be obtained through the gathering of well chosen samples—just as the industrial chemist analyzes the product of a mine by analyzing a minute fraction of the total output. If the sample is carefully chosen and fairly representative of the whole, the results are extraordinarily accurate. Much of the the material entering into wage and price series published by commercial agencies is of this nature, as is also the work of the Harvard and Northwestern University Bureaus of Business Research and similar agencies in the field of distribution. In the comparatively small number of cases where such studies of samples have been made, it has been possible to establish standards of wide application. The expense of such research through samples is relatively small and the results very reliable. In one recent case where a direct comparison has been possible between a sample collected by the Harvard Bureau of Business Research and mass data gathered by the Federal Government from a whole industry, the statistical conclusions showed a variation of less than 1/10 of 1%.

This method of research through samples should be applied very much more widely than it has been to date. Many fields of business activity which could be readily studied in this way are now in the realm of hypotheses corresponding by comparison to the fantastic hypotheses of the ancient astrologers. The present basis of bank credits may be mentioned as an example. The weight given by most banks to the arbitrary rule that the relation between current assets and current liabilities should show a ratio of $2 of assets to $1 of liabilities has little or no relation to the facts of business. It was applied in 1919 to credit ratios on a 40c cotton market

and a 23c sugar market on much the same terms and with practically the same weight that it has been applied recently to similar concerns in a 12c cotton market or a 7c sugar market. A two to one ratio in the first cases was a far more dangerous condition than a one to one ratio on the lower price levels. To a considerable extent, this failure to relate credits to the fundamental economic background, in such a way that the dynamic and changeable nature of sound credit standards may be realized, is responsible for business failures resulting from the severe swings of the business cycle. It is responsible also for the recent discovery of many bankers that, in severe depressions, liquid assets are the assets which disappear first. It should be readily possible through research to build up a proper relative basis for credits which would take into account at various stages of the business cycle the importance of commodities, and commodity price levels, as elements in credit risk. Such a basis would vary from industry to industry. This is one example of a promising field of research which might be approached through the gathering of sample data.

Research through samples of this nature would, if broadly conducted, give an excellent basis for the interchange of experience across the industries. We have recently found that studies made in the marketing problems of the jewelry industry give a valuable background for the consideration of widely different marketing problems, such as the distribution of heating supplies.

Both mass data and sample data of this nature deal mainly with problems of the executive affected by facts and powers outside of his own control and to a large extent outside of his own business. In addition to this type the executive needs assistance through research in the solution of his daily internal operating problems which may or may not be directly related to the general economic background or to the industry as a whole. There is now practically no way that the executive may get such assistance except as he acts on the precedents and practises of his own organization, or hires new members of his organization from competitors.

The case system of teaching business in the Harvard Business School has thrown some interesting sidelights on this need. Adopting the general principle of Langdell's case system, by which most of the law schools of the country teach law, we have developed on a large scale similar methods of teaching business, and a constantly increasing percentage of the work of this school is conducted upon a true case[5] system. The student obtains his business training by solving executive problems, which actually have occurred in business, so presented that he deals with conditions similar to those which confronted the executives. This method of teaching business from cases, a logical development of the earlier problem method of instruction, has largely revolutionized the class-room work in the School and improved the quality of instruction. For teaching reasons the business situations or cases used for this purpose have usually not included the solutions which were reached by the business men.

The point of view of the teacher is essentially different from that of the business man. While the teacher desires to have the solutions for his own guidance, he prefers that they should not be disclosed to the student until the student has thought the problems out. When one solution of a particular business problem is printed in a case book, this solution tends to have the overweight of authority which goes with the fact that it alone is printed, although the conclusion actually reached is often not the best possible solution. Where also only one course of action is set forth, there are inadequate comparative bases for

[5] The business case is of course not generally a litigious situation but rather a practical set of facts out of which arises a problem or problems for determination by the man in business. See "Business Teaching by the Case System" *American Economic Review*, Vol. XII, No. 1, March, 1922.

analysis to determine the deficiencies and the strong points of this decision. These reasons which have led us to the present technique of presenting cases to the classroom under which conclusions are generally omitted, limit the use of case books for business men. The executive finds that other people have faced problems like his own, but he gets no light from their experience.

There is an insistent demand from executives, therefore, for the publication of solutions to these cases. Moreover, if the present use of such cases for training junior executives within various industries continues, the solutions worked out in practise should be made available to the senior executives who lead the discussions. Indeed, an adequate development of the case system for teaching in business schools will be possible only if the teacher has not one alone but several solutions for the important problems contained in the case book. Under these conditions he will be able to use these several solutions as a basis for comparative discussion of the business theory involved.

While the cases in our present case books have a value as teaching material in advance of anything which we have been able to supply through lectures or texts of the ordinary sort, there is need of further developments in the technique of presenting business situations. For this purpose case books like text books should be built on precedents, including the solutions. We now ignore the solutions in compiling the books. The full scientific approach to the teaching and development of theory through cases will not be realized until the instructor has the recorded facts of business for use, not only to show how the problems in business arise, but how they have been handled by different executives. He needs also some idea, wherever possible, of the success or failure of the method adopted. Isolated business cases have been published with their solutions in various places, but the number of such cases which have been worked out with the detail necessary, if they are to be useful for solving executive problems arising in the future, is lamentably small compared with the field to be covered. Both the case system for its proper development and business itself need something like the court reporter who systematically reports numerous cases for current publication.

As is well known, law cases are reported as they occur, with no effort at anything but a chronological arrangement. The ability to coordinate new cases with cases decided in the past and to fit the conclusions of the court into legal theory is gained through elaborate indices and digests. Something corresponding to these court reports and their digests is needed in business so that we may build up, as time goes on, a volume of recorded precedents which may be subjected to critical analysis and classification. The publication of such cases is an easy and inevitable development of the research which is the basis of the case system as we are now using it. We have therefore in preparation a volume which is intended to be the first of a series designed to help in the accomplishment of such a result.[6]

The plans for this publication include the adequate indexing of these reports, so that the executive who wishes to know how different concerns have handled a particular problem perhaps at various stages of a business cycle may, as time goes on, study precedents not only in his own industry, but in other industries where similar problems occur. We shall include the same problem under differing conditions where a variety of solutions has been worked out by different concerns. As this series of business reports is published from year to year we hope it may be one of the agencies which will give business managers an opportunity to make better use of business data, to base their current executive action on broader precedents than those within their own concerns and to choose

[6] These volumes will be published from time to time under the name of *Harvard Business Reports*.

from among several solutions of the same problem solutions which, properly modified, may be the best for use under their own conditions. In a few fields where we have already collected several different solutions to the same problem, we see the practical value of the variety of answers. The ability to analyze these solutions comparatively enables an executive to reach a sane conclusion with far less time and far greater assurance than would otherwise be possible.

May not this and similar research agencies and records be the basis for a development of theory in business problems somewhat as the rolls of the court and Bracton's "Notebook" formed a basis for the development of early theory in the common law?

There are now at work a number of research agencies, all of which will add to the mass of facts upon which alone business theory can properly develop. In the use of their results the broad fundamentals of the scientific method should be kept in mind. The task of developing business theory scientifically is first, the recording of facts; second, the arrangement of these facts into series and relationships; third, the development of generalizations which can be safely made only upon the basis of such recorded facts. Except in so far as this method is applied consciously on a large scale, the generalizations of business will be largely hypotheses more or less fantastic in their nature, and the executive must often gamble with his most important problems.

THE TAXATION OF CAPITAL GAINS

By GEORGE O. MAY

THE treatment of capital gains under a steeply graduated income tax law constitutes one of the most difficult problems in fiscal legislation as is sufficiently evidenced by the changes contained in successive revenue acts. Impartial students of the subject will, it is believed, agree that the present state of the law is not satisfactory, and among the remedies which are receiving consideration is the abandonment of the taxation of capital gains and of the allowance of capital losses as a deduction from taxable income. In Great Britain, where capital gains have not heretofore been taxed or capital losses allowed as deductions, the question is being debated whether some change in the law is not necessary on account of the avoidance of taxation of what is essentially income by clothing it in the garb of capital. The time, therefore, seems opportune for a discussion of the problem.

I. The Nature of Capital Gains

By capital gain is meant the profit upon the realization of assets otherwise than in the ordinary course of business; this profit being the excess of the proceeds of realization over the cost of the property realized.

In considering the proper treatment of capital gains under an income tax law it is desirable to keep in mind three different causes which may make a capital gain possible. These are:

(1) Change in absolute value due to natural growth or similar causes.

(2) Change in relative value of property in comparison with other property, due to external causes.

(3) Change in the money value of property due to depreciation or appreciation of currency.

In most cases, of course, a capital gain is due to a combination of these influences, some perhaps operating in a favorable, others in an unfavorable, direction. All three for instance operating favorably might be found on the sale in the spring of 1919 of a privately owned barrel of whisky bought as new whisky in 1913. There would be first the increase in absolute value due to aging, second the increase in relative value due to the legislation enacted in January 1919, and third the increase in money value, common to nearly all property, resulting from the expansion of currency and credit during the war.

Looking at the problem from the standpoint of principle, the gain due to the first cause is clearly only a special form of investment income and therefore naturally comes within the purview of an income tax. Gains due to the second cause are real gains, and therefore fairly taxable, even if not ordinary income. Indeed if discrimination in favor of earned income as against investment income is well founded, it may well be argued that these gains from unearned increment should be regarded as less entitled to consideration than ordinary recurring investment income.

Gains from the third cause are more apparent than real. There would seem to be no true income or gain from selling property at double its cost, if everything which can be bought with the proceeds is also selling at double its former price. This has been a common situation in re-

cent years and has been complicated by the factor of involuntary sale or realization. In recent tax laws attempts have been made to meet it, first by replacement fund provisions under which no taxable profit is deemed to be derived from an involuntary sale if the proceeds are put aside to be employed in replacing the property and secondly by the provisions in the 1921 law, permitting exchanges of property without any liability to taxes as a result thereof.

II. Relation of Capital Losses to Taxation of Capital Gains

As a practical proposition it would be impossible to analyze every capital gain into its component elements and apply different rules to different elements. In particular it would be a hopeless task to convince the average taxpayer who had completed a transaction showing a loss, that he should pay a tax on the transaction because the loss was found upon analysis to be made up of an increase of value due to the first or second of the three causes above mentioned and therefore taxable, offset by a larger loss arising from the third cause and therefore outside the scope of the tax law.

The alternatives therefore are to tax all gains or to exclude all gains, except such as can be covered by simple rules. In considering the question whether capital gains should be taxed the successive points which arise are:

(1) Is it in principle desirable to tax capital gains?

(2) If so, should capital losses be allowed as a deduction from taxable income?

(3) If both the first and second questions are answered in the affirmative, how serious are the dangers of evasion and how far is it practicable to guard against them?

It must be understood that the danger of avoidance is not disposed of by excluding capital gains and losses from the scope of the income tax, as is evidenced by the movement in England already referred to. A majority of economists would probably take the view that capital gains are not a proper subject for taxation under the guise of an income tax. Apart from this technical point, however, it would seem that in principle capital gains would form a most appropriate subject of taxation and the Supreme Court has held that they can be taxed as income. Some theoretical considerations have already been briefly recited. Among other reasons which would have weight with a statesman as well as with a politician is the fact that the great accumulations of wealth by individuals in the country have largely been the result of capital gains, and the salary—or wage—earning classes might quite naturally feel that they were being unjustly discriminated against if they were taxed on their salaries or wages and the large capital gains of the very wealthy should escape taxation. Moreover even if the taxation of capital gains be regarded as necessarily involving the allowance of capital losses, it would seem that treating both on the footing of income would ordinarily be expedient in a developing country in which naturally the capital gains would far exceed the capital losses. This proposition is, however, subject to the important qualification that it holds only so long as the form and degree of taxation are not such as to discourage the realization of gains and encourage the taking of losses, and thus to cause a serious disturbance of the normal balance between gains and losses.

Turning to the second point, while it may seem that in justice the rules regarding gains and losses in a tax law should be as nearly as possible similar, it may be recalled that this principle has not usually been applied in our income tax laws. Even in the case of ordinary business until the enactment of the present law a taxpayer who made a profit on trading in one year and an exactly similar loss in another paid tax on the profit and obtained no relief in respect of the loss. As regards losses not incurred in the taxpayer's trade or business

the Act of 1913 allowed no deduction and the Act of 1916 allowed a deduction only to the amount of the gains of a similar character included in the same return. The tax rates under these Acts were, however, small as we now reckon tax rates and the problem becomes difficult only when taxes are large. In 1917 when the maximum rate of tax was increased from 15% to 67%, the limitation on the deduction of losses contained in the Act of 1916 was continued, but in 1918 when the maximum tax was still further increased to 77% all limitations on deductions of capital losses were removed.

Even under this law if a taxpayer pursued the even tenor of his way undisturbed, taking capital gains or capital losses as his judgment of present and prospective values dictated, and entirely uninfluenced by tax considerations he was not in the position that tax relief resulting from a loss was exactly equivalent to the tax burden resulting from an equal gain. Such a taxpayer, if he incurred losses, was thereby relieved from surtax at the rates he would have paid on his regular income; if on the other hand he made a profit he paid surtaxes at the higher rates applying to income in excess of his regular income.

Thus to take the case of a man who had a regular income in each of the years 1919 and 1920 of $50,000 and sold one investment at a capital loss of $20,000 on December 31, 1919, and another at a capital gain of $20,000 on January 1, 1920; in 1919 he paid on an income of $30,000 a total tax of $3,890, in 1920 on an income of $70,000 a total tax of $16,490, together $20,380. If, however, both transactions had fallen in the same year he would have paid on an income of $50,000 in each year a tax of $9,190; a total for the two years of $18,380, and his capital gain, therefore cost him in taxation $2,000 more than he saved on his capital loss though the tax rates were the same in both years.

However, this discrimination against the taxpayer was of relatively minor consequence compared with the wholesale loss to the Government resulting from the fact that taxpayers liable to heavy rates of surtax very generally refrained from taking profits, but not from taking losses. It is impossible now to estimate the loss of taxes which resulted from this disturbance of the normal policy of investors, but it must have been enormous. At the same time transfers which were desirable from the broad standpoint of public welfare were retarded or prevented. Men of advanced years, who were anxious to turn over their business affairs to younger and more vigorous men, were deterred from doing so by the tax which would have fallen upon them in the event of a sale, and in innumerable ways the ordinary course of business was affected by the artificial restraint on sales at a profit and the encouragement of sales at a loss.

To meet some phases of the problem, extensive new provisions were introduced in the Act of 1921, mainly in two forms, (1st) the limitation of the tax on capital gains in the case of investments carried more than two years at 12½%, and (2nd) provisions under which capital assets could be exchanged rather than sold without any tax being incurred. Under this law the rule that what is sauce for the goose is sauce for the gander invoked by taxpayers in support of the removal of the limitation on deductible losses in 1918 was waived in favor of the taxpayer. Logically the converse of the first provision just referred to would have been that a taxpayer sustaining a capital loss should pay the ordinary tax on his regular income and deduct therefrom 12½% of the amount of his capital loss. The Act, however, permits him to save the maximum surtax he would otherwise have paid. Thus to use the same illustration as before, under the existing law a taxpayer with a regular income of $50,000, a capital gain of $20,000 in one year, and a capital loss of $20,000 in the next, pays over the two years $2,800 less than if both

transactions had occurred in the same year.

In the case of the very wealthy, therefore, the present law makes it distinctly advantageous to take capital gains one year and pay a maximum tax of 12% thereon and take capital losses in another year, saving the maximum surtax to which the taxpayer would otherwise have been liable.

The position in regard to the exchanges is even more unfavorable to the Government. A taxpayer holding stock of the A. B. Company desires to dispose of it and reinvest in the stock of the C. D. Company. If the present market value of the stock of the A. B. Company is less than its cost to him he sells this stock and buys the stock of the C. D. Company and is entitled to a deduction from his taxable income of the loss on sale. If, however, the market value of the stock of the A. B. Company is above cost he arranges an exchange of this stock for stock of the C. D. Company with a cash adjustment and under the law he derives no taxable gain and therefore pays no additional tax.

From this brief summary it will be seen that in less than 10 years the relation between the provisions regarding capital gains and those regarding capital losses has been changed from one of marked disparity in favor of the revenue to an even greater disparity in favor of the taxpayer. Probably, every change has operated to the detriment of the revenue except to the extent that legislation has been retroactive and heavy taxes have been levied on transactions which would never have been consummated if a change in the law had been anticipated. Retroactive legislation, however, is not a desirable practise and while it was doubtless justified in a time of world warfare, it should be banned for the future like many other practises developed during the war.

The above history of legislation since income taxes became possible on March 1, 1913 suggests that though the disparity in favor of the taxpayers may be lessened, it would not be practicable even if desirable to restore the old disparity in favor of the Government. It will be assumed, therefore, that if capital gains are to be taxed, capital losses must be allowed as deductions on at least an equal basis. Though specific provisions may facilitate tax avoidance or make it more difficult, the Treasury in dealing with all such problems suffers from the fundamental disadvantage that it is the taxpayer who not only decides the time and the form of transactions giving rise to capital gains or losses, but exercises the option whether they shall take place or not. To use a military analogy, the initiative, whose value in warfare is universally recognized, is always with the taxpayer. The Treasury has its fixed defences; the taxpayer moves only after careful study of these defences, and it is not surprising that the Treasury, with a defence impregnable against a frontal attack, often finds itself helpless against an enveloping movement which attacks it in the flank or rear. This disadvantage is increased by the fact that the distinction between ordinary income and capital gain is often a fine one, and a slight change in the form of the transaction may throw it into one class or the other. If, therefore, the Government decides to tax capital gains and allow capital losses as deductions, the taxpayer can refrain from taking gains but may take losses. If on the other hand the Government should exclude capital gains and capital losses from the scope of the income tax altogether, there is danger of transactions which essentially give rise to income being cast into such a form that the gain would technically be held to be a capital gain. How fine the distinctions are, and incidentally how unexpected may be the results to the Government and to the taxpayer of any action outside the ordinary course of business in a time when tax laws are rapidly changing both in form and in degree of severity, is very well illustrated in the case of the Phellis or du Pont case. This case and the Rockefeller-

Prairie Oil and Gas case decided by the Supreme Court at the same time, constitute two of the most complete, and in amounts involved the most considerable, of the Pyrrhic victories of the Treasury in tax litigation. The point at issue was not, of course, whether the transaction involved resulted in a capital profit or in a profit in the nature of ordinary income, but what might seem a much simpler question, whether it resulted in any profit at all.

III. The Phellis Case

The amounts involved in the Phellis case are so large and its features so striking as to make it worthy of detailed consideration.

The facts are briefly that the E. I. du Pont de Nemours Powder Company of New Jersey in 1915 transferred all its assets to a Delaware company in consideration of debentures and stocks of that company, and retaining debentures of the Delaware company equal to the par of its common stock (approximately $30,000,000.) distributed to its common stockholders two shares of Delaware company stock for each share of New Jersey company (or an aggregate of $60,000,00.). The market value of the Delaware company's stock at the date of distribution was $347.50 per share. The Supreme Court has now found that this distribution was a dividend taxable to the stockholders of the New Jersey company, and by this decision has added to the taxable income of 1915 an amount of approximately $210,000,000, or nearly 5% of the total taxable income disclosed by all the individual tax returns of that year.

The five judges of the Court of Claims agreed in the view that in substance there was no income to the stockholders of the New Jersey company because the stock of the Delaware company represented the same property and business as the stock of the New Jersey company had previously represented. This view was supported, however, by only a minority of the Supreme Court, the majority finding that both in substance and form the stock of the Delaware company constituted real income to the stockholders of the New Jersey company.

In passing, it may be remarked that while each of the courts looked beyond the form and discussed the substance of the transaction—one finding that in substance there was no dividend, and the other that the whole of the stock of the new company at its market value constituted a dividend—in neither court was a third alternative discussed which seems most accurately to reflect the substance of the transaction. This alternative is that the stock of the new company represented substantially what the old stock had previously represented, and that the old stock, which after the transaction represented only an equal amount of debentures of the new company, was the real dividend. In substance the position of the stockholder after the transaction was almost identically the position in which he would have been placed had the New Jersey company created $30,000,000 of debentures and issued them to the common stockholders by way of dividend, or even if it had sold $30,000,000, of debentures at par and paid the cash to its stockholders. After the transaction the stock of the old company represented to the stockholder of the old or New Jersey company, something severed from the du Pont property and business which he could realize without reducing in any degree his proportionate interest in the general du Pont assets.

The controversy extended over six years, during which anyone who was a stockholder at the time of the reorganization and who subsequently sold a part or the whole of his stock in the Delaware company was unable to determine whether under the Income tax law he had made a profit or loss by doing so. If, for instance, such a stockholder sold 10 shares of the Delaware company's stock for $2,000 the transaction would on the Government's theory result in a deductible loss of $1,475. If, however, the Government's

contentions were overthrown the result would be a taxable profit of a rather greater sum. The Government having won, it is interesting to consider what this victory has gained for it and what has been, or will be, the cost.

The key-note of the decision by which the Supreme Court held that stock dividends were not taxable was perhaps the statement that a stock dividend provided nothing out of which the stockholder could pay a tax without parting with some portion of his interest in the corporation. Assuming that the taxpayers who were called upon in 1921 to pay surtaxes on the profits which they are deemed to have made in the transaction of 1915, should have had recourse to the sale of their stock to provide funds with which to pay their tax, what will their position be?

The market value of the stock of the Delaware company was at the time of the decision roughly par. Any holder who received his stock as a dividend in 1915 pays tax in that year on the basis of a value of $347.50 per share, and if he sold in 1921 he is entitled to claim a loss on sale in 1921 of $247.50 per share. In 1915 the normal tax was 1% and surtaxes beginning at incomes of $20,000 ranged from 1% to 6%; in 1921 the normal tax was 8% and surtaxes beginning at incomes of $5,000 ranged from 1% to 65%. It will be apparent, therefore, at once how great the advantages of the decision to a taxpayer may be. Taking by way of illustration the case of a married man without dependents whose income apart from the dividend in 1915 or sale of stock in 1921 was $7,500 in each year, and assuming that he held 10 shares of the New Jersey company's stock and received 20 shares of the Delaware Company's stock as dividend in 1915, and that he sold this stock in 1921 at $100 a share, it will be found that the dividend does not bring him into the surtax class for 1915, so that he has no additional tax to pay for that year, but the loss of sale in 1921 reduces his taxes for that year from $320 to $2.

Multiplying the figures twenty-fold and taking a man whose income was $150,000 in each year and whose original holdings of the New Jersey company's stock was 200 shares, it will be found that the addition of the dividend to his income for 1915 increases his taxes for that year by $5,950, and the loss on sale in 1921 decreases his taxes for that year by $51,650.

The full effects of the decision are not reflected even in these figures, as had the opposite decision been reached there would have been a taxable profit instead of a loss on any sale of stock in the Delaware company. Presumably the decision will also involve considerable saving of tax to the Delaware company.

No doubt some stockholders had sold a part or all of their stock prior to 1921 and in other cases the stock is held by persons who would not, and perhaps could not without difficulty, sell any great proportion of their holdings. The cost of the victory to the Government will therefore probably not come near its potential limits.

It is, however, reasonably certain that the cost to the Government in the form of taxes lost will enormously exceed the additional taxes recovered as a result of the decision, and one is tempted to ask questions like those of the children in Southey's poem "After Blenheim," and one finds no answer except Kaspar's:

> "But what they fought each other for
> I could not well make out.
> But everybody said," quoth he,
> "That 'twas a famous victory."

A similar analysis of the Rockefeller and Harkness cases would lead to a similar conclusion.

The claim of the Government was at best largely technical since it could not be said that the du Pont stockholders realized true income from the transaction in an amount approaching the two hundred millions which the court held must in law be deemed to be derived therefrom. The case turned on the special facts of a very

unusual transaction and established no new principle, and the net result in the particular case of the Government's contentions being upheld was bound to be a loss of revenue. It is surprising, therefore, that the Government did not accept the verdict of the Court of Claims.

The position after this decision and the stock dividend decision (Macomber v. Eisner) would have been most unsatisfactory if Congress had not in the 1921 law provided in substance that no income should be deemed to be derived from corporate reorganizations.

The interest of the case in relation to the subject of this discussion, lies in the evidence it affords of the room for wide difference of opinion concerning the income-producing effect of a transaction, even if the question is considered with regard to its substance and not merely to its form.

The room for difference of opinion on the question whether some of the complicated transactions of modern corporate finance produce income in the narrower sense, capital gains, or no gain or income at all, is obviously even greater.

IV. Conclusions

A study of the subject over a period of many years has led the writer to the conclusion that while either course is fraught with danger and tax avoidance on a large scale is bound to continue as long as high rates of surtaxes are maintained, on the whole the losses of revenue involved in the taxation of capital gains and the allowance of capital losses as deductions from taxable income are greater than those involved in the opposite course; further, that the margin is so great as to outweigh the consideration that in principle it is preferable to tax capital gains. Neither the war period, with its extravagant gains and unmerited losses, nor the period of readjustment immediately after the war was an opportune time for a change of policy in this regard. As, however, we get back to more normal conditions, such a change seems worthy of the most serious considerations, more especially as the existing law in remedying defects of the old law has created new opportunities for tax avoidance from which the Government is bound to suffer very heavily.

If capital gains and losses are in general to be excluded from the scope of the income tax, safeguards will be necessary to prevent a wholesale escape from taxation of income by conversion into capital form. It is believed, however, that three provisions would be sufficient to prevent the great bulk of such evasion, namely:

(1) That where a capital gain or a capital loss arises in respect of an asset, which from its nature is subject to a natural increment or decrement in value, any gain shall be deemed to be income to the extent of a reasonable return on the investment for the period during which it has been held. Conversely the natural decrement should be allowed as a deduction from taxable income.

(2) That where property is disposed of within, say, two years of its acquisition, the transaction shall be deemed to be a trading transaction and not a capital investment.

(3) A provision under which the tax would be levied on the sale of stock of corporations, particularly private corporations, where it might appear that there was a profit which was attributable to the accumulation of undivided profits by the corporation and that the sale was made to avoid the imposition of the tax which would be assessed on such profits if distributed as dividends.

Of the three provisions it is believed that only the third would offer serious difficulty in its formulation and it should readily be possible to surmount these dif-

ficulties with the assistance of a group of persons familiar with business practise and with tax procedure.

Doubtless the adoption of this suggestion would involve the definite abandonment of a large amount of revenue which the Government ought some day to receive, but it is not believed that the sacrifice of revenue which the Government would otherwise be likely to receive would approach in amount the increase in revenue that would result from the elimination of deductions for losses.

Tax avoidance on a substantial scale would doubtless continue even if the suggestion were adopted, but this is bound to be true under any law so long as the extreme surtaxes now in force are continued. Most students of the subject are in agreement with the views expressed by the Secretary of the Treasury in his letter to the Chairman of the House Committee on Ways and Means of April, 1921, that the immediate loss of revenue that would result from the repeal of the higher surtax brackets would be relatively small and the ultimate effect should be an increase in the revenue. Congress apparently clung to the outworn idea that such a repeal would result in a loss to the Treasury for the sole benefit of the rich. It will, however, ultimately be forced to recognize the shortsightedness of its policy, especially having regard to the existence of the huge volume of tax-exempt securities.

In justice to the present Congress one must recognize that not only is the problem an extremely difficult one, but it is made more difficult by the sacrifice of sound principles to political expediency in the original adjustment of income taxation to war necessities. Given a business world organized largely in the form of private companies which are practically incorporated partnerships, a world in which business transactions may readily be cast into different forms so as to produce ordinary income or capital gains as may be the more advantageous and given also a huge volume of tax-free securities; under such conditions the combination of a low normal tax on income of individuals and corporations with very high surtaxes is neither equitable nor effective. This is equally true whether capital gains and losses are treated as entering into the determination of income or not. The form of tax avoidance changes to meet either rule. The only real solution is to reduce the disparity between normal taxes and surtaxes.

Had the Congress recognized these facts in war time and raised the normal tax and the lower range of surtaxes to higher levels as urged by the Treasury, it would have been possible later to make reductions all along the line. It is not surprising however that the present Congress should look askance at a proposal to increase the normal tax and the lower surtaxes and reduce the higher surtaxes. Though in reality such a scheme would be sound finance and benefit the entire community it seems on the surface too much like a scheme to relieve the rich at the expense of the relatively poor to be expedient from the standpoint of party politics. It is certain however that the high surtaxes will prove increasingly ineffective and injurious the longer the present system is continued.

In the meantime, it is believed that the revenues can be increased, tax avoidance greatly diminished, and greater equity secured by the abandonment of the rule of taxing of capital gains and, conversely, of allowing capital losses as a deduction from taxable income.

BANK MANAGEMENT AND THE BUSINESS CYCLE

By O. M. W. SPRAGUE [1]

AT the beginning of every period of industrial depression, a large majority of business borrowers suddenly discover that they owe overmuch to merchandise creditors and to banks. They find that they were too eager to take advantage of the alluring opportunities of the preceding year of business activity. That a more conservative course will be adopted on their own initiative by business men generally in similarly active periods in the future is altogether improbable. Boldness, enterprise, willingness to assume risks are qualities essential for the successful conduct of business affairs. He is an exceptional person who possesses these qualities in effective combination with caution and restraint. On the other hand, most men engaged in business may be expected to manifest some readiness to avoid extreme risks, if these risks are brought persistently to their attention by those in position to make their views effective in practise.

For the exercise of a much-needed restraining influence during periods of business activity, the commercial banks throughout the country are the appropriate agency. Banks are in position to secure the adoption of policies which will be of advantage to business, but which business itself cannot accomplish. While there is abundant occasion for enterprise and risk-taking in banking, the nature of the business enforces a decidedly more conservative attitude than is required in most other occupations. A well-managed bank must be able not merely to meet its obligations to depositors; it must also hold itself in position to grant credit at all times to its solvent customers. And its service to its borrowing depositors does not stop there. With advantage both to bank and to customers, the banker may properly be expected to decline to grant credit when the advance is likely to prove a disservice to the borrower.

But in the United States, with more than 30,000 commercial banks eagerly competing for business, it must be recognized that it is by no means an easy matter for the banker to impose restraint upon the borrowing desires of solvent customers. The fear that valuable accounts may be withdrawn by depositors, tempted by the offer of more liberal credits by other banks, exerts a potent influence upon the lending policies of all commercial banks. For this reason, no credit requirements can possibly secure general acceptance unless they are based upon very definite and compelling considerations. When these conditions are present and clearly recognized, past experience indicates that competition between the banks is not an insuperable obstacle.

I. Credit Analysis—The Current Ratio

Nearly 40 years ago, a few progressive bankers introduced the practise of requiring financial statements from borrowers. Progress was slow at first; most customers were decidedly opposed, and not infrequently transferred their accounts to less exacting banks. In spite of all opposition, however, the movement made constant headway, until now all banks in the large cities and many elsewhere secure statements as a matter of course from virtually all borrowing customers. With this precedent in mind, we can confidently anticipate the adoption of other credit require-

[1] Professor Sprague who was on leave of absence from Harvard University during the academic year 1921-22, was engaged during that time, under the auspices of the Pollak Foundation for Economic Research, upon a study of bank credit in relation to business cycles. His book on that subject, which includes among other discussions the substance of this article, is now being published by the Pollak Foundation.—*Editor.*

ments if the advantages to be derived can be made similarly evident and convincing.

Borrowers' statements of condition are subjected to painstaking analysis, both for a series of years and in comparison with the statements of others engaged in the same line of business. The most significant of the results derived from such analysis are reflected in the ratio between current assets and current liabilities, commonly known as the current ratio. Bankers speedily perceived that there was wide diversity between different industries in the current ratio that would afford a given degree of assurance that sufficient cash would be available to meet maturing obligations. For a very limited range of industries, a ratio of less than two to one might be adequate, while for a much larger number a higher ratio should be maintained.

In the analysis of credit, differences between concerns in the same line of business, based upon a variety of particular considerations, are recognized, as are also the special seasonal requirements of a large number of industries. Careful attention seems to have been given to every factor save one, which even remotely has a bearing upon the position of borrowers, but the neglected factor is by no means of minor importance. During every period of business activity, conditions develop under which the value of both receivables and inventories becomes increasingly unstable. In the successive stages of the business cycle, there is a marked difference in the liquidness of current assets, a difference of which definite account should unquestionably be taken by the banks in granting credit. To put the matter concretely, a current ratio that was entirely adequate in 1915 or 1916 had become insufficient in 1918 or 1919, and in the case of many industries was dangerously below the safety line.

II. Credit Conditions during the Upward Movement of the Business Cycle

The initial stage of periods of business activity is marked by a growing demand for goods of all sorts which is based upon solid foundations. Additional labor is readily available, and the efficiency of all labor is above the average as a result of recently experienced difficulties in securing employment. During the preceding months of depression, overhead charges will have been brought down and plans for expansion carefully worked out, plans which in many instances will tend to reduce unit costs materially. Inefficiently managed and badly located enterprises will have been weeded out, and the financial position of a much larger number strengthened. Finally, supplies of capital are ample, and moderate rates prevail both for investment funds and for bank loans. It is to be noted that, in addition to a general decline in prices during the period of depression, there are important changes in the relative prices of different commodities which permit a renewed demand on profitable terms for both materials and finished products.

Under these favorable conditions, the output of industry increases by leaps and bounds for a year or more after the beginning of a period of business activity. The rate of increase inevitably slackens, however, at a date not much later than that at which labor and plant become fully employed. Thereafter, there can be only such moderate increase in output as comes from the slow growth of population and the similarly gradual introduction of improved methods and equipment. Moreover, as the period of activity continues, these agencies for increased production are offset by influences unfavorable to production, notably an inordinately rapid labor turnover and transportation congestion.

The endeavor to expand plant and equipment, and the demand for goods of all kinds do not slacken with the weakening of the forces which gave the initial impetus to business activity. On the contrary the desire to expand operations and the demand for supplies of goods become more and more intense right up to the close of

the period of activity. Explanation is not far to seek. While all the influences tending to promote industrial development along sound lines are losing force, one influence, and that an unhealthy influence, is becoming more and more potent until it is no exaggeration to say that it is the overshadowing controlling factor in the business situation during the last months of every period of business activity. This noxious influence is that which is exerted by a rapid advance in the general level of prices. A general advance of prices, from whatever cause, exerts an unhealthy stimulating influence upon business because rising prices are a direct means of abnormally enlarging business profits. Wages and salaries advance more slowly than the prices of most commodities to the advantage of growers and manufacturers, while wholesale and retail dealers reap gains in the ordinary course of business from the advance in prices during the interval between the purchase and sale of their stocks of goods. Commitments induced by profitable experience of the effects of rising prices, commitments which will only prove profitable in case prices rise further, are perhaps the most general element of weakness in the situation disclosed upon the advent of a period of depression. A condition which then deeply impresses the business community is the discovery that stocks of goods are abnormally large at every stage of production and marketing. The apparent scarcity is found to have been due to reckless buying all along the line. Large numbers of producers and dealers, fearing that full deliveries would not be made, are found to have contracted for much larger supplies of goods than they could use even on the basis of the enlarged sales which they were anticipating.

Acting upon the mistaken notion that this intense demand for goods indicates promising possibilities of a permanently enlarged volume of business, producers make frantic efforts to increase plant and equipment, regardless of the high cost of materials and of construction, and of the difficulty of securing adequate capital and a satisfactory additional working force. At the same time, in agricultural sections of the country farms find eager purchasers at prices which the future is certain to show to have been ruinously excessive.

III. Credit Conditions during the Period of Inflation and Readjustment

The unstable conditions in all branches of industry which develop in the latter part of a period of activity would have far less serious consequences if they were not paralleled by an over-extended financial position of very large numbers of business concerns. Although a goodly portion of the satisfactory profits of the years of prosperity are commonly retained, funds required for the expansion of plant and the purchases of goods have far exceeded the growth of the capital from this source of very many business undertakings. Moreover, owing to the intense demand for capital and consequent high rates of interest, short-time borrowing is employed in raising funds which would ordinarily be secured from shareholders by the issue of new stock or by the sale of long-term bonds. Relying upon a continuance of good earnings, which will be largely put back into the enterprise, heavy obligations to banks and to merchandise creditors are incautiously incurred to make up deficiencies in working capital.

In view of the growth of all these conditions during the latter part of a period of prosperity it is evident that the business community becomes more and more vulnerable to shock as the period of activity proceeds. Under the baneful influence of rising prices, the situation becomes increasingly unstable, and the necessity for radical readjustments more and more unavoidable with no escape from a period of depression. The corrective of an increase in output, so frequently mentioned at such times is altogether illusory. No considerable increase in output is possible when all are fully employed, and even if

by miracle it should occur, demoralization would follow because the business community has become involved in a situation which can only be held while prices continue to rise. An increase in output in 1919 would not have proved a cure for the unsound conditions that obtained at that time. It would presumably have rendered the situation in 1920 even more difficult to handle.

There is a widespread belief among many producers that periods of activity might continue indefinitely if a more liberal credit policy were adopted by the banks. No doubt, some prolongation of a period of activity might be secured by this means, but only at the heavy cost of a more serious collapse later on account of the greater accumulation of deferred adjustments which must be made in the subsequent period of depression. Recent history furnishes a striking example of the noxious effects of long continued credit expansion. To the supply of credit already enlarged to an unheard of extent during the three preceding years, large additions were made during the last half of 1919 and the winter and spring of 1920. The most conspicuous results of that policy were a decidedly more unstable industrial situation and a far more generally and seriously over-extended financial condition among farmers, manufacturers and dealers.

For the increasing industrial instability that marks the course of periods of business activity, bankers are no more responsible than those engaged in other occupations. There is, however, a most important and fundamental difference between banking and other particular business operation. In the absence of much expansion of credit by the banks, the rise of prices which induces unhealthy development all along the line, could not possibly occur. Bank credit is indeed by no means the sole price-making factor, but when a period of activity is well under way no considerable increase in prices is possible unless additional supplies of bank credit are forthcoming, since by that time the free cash resources of the business community are already fully employed.

When asking for larger lines of credit in periods of business activity, borrowers commonly urge that, because prices have risen, they require more credit to handle a given volume of transactions. There is force in this contention, but experience shows that they ordinarily desire, and in fact secure, not merely sufficient additional credit for that purpose, but a further increment which permits a still further advance in prices. Recent experience of the woolen industry may be taken as fairly typical. The marked and unhealthy advance in the price of wool in 1919 could not have occurred if Boston and other banks had not granted unusual credits to wool dealers. With these funds wool dealers competed against each other for wool, boosting prices to abnormally high levels with consequences painful to themselves and hardly to the permanent advantage of the wool grower. A similar situation obtained throughout the entire industry, among makers of woolens and worsteds and clothiers. All were attempting to handle more business, but the credit secured for the purpose was absorbed in a sellers' market for materials and labor, yielding still higher prices rather than an increased output. As for wholesalers and retailers, the summer of 1920 disclosed holdings of large stocks purchased at high prices, and in very many instances obligations under contracts for abnormally large deliveries in later months. These unhealthy conditions throughout the industry could not have developed if a less considerable volume of credit had been furnished by the banks.

IV. Conclusion

Our problem then is to find some workable means of confining the volume of credit within limits, not merely of safety to the banks, but to limits which shall be of advantage to the community at large and to the individual borrower. Drastic legislative restrictions of the lending

power of the banks might serve, but would also seriously diminish the ability of the banks to furnish credit for desirable purposes. Restraint through the reserve banks can be effective only when large numbers of commercial banks are securing accommodation from those institutions, a condition that is unlikely to develop early enough in a period of activity for restraint by the reserve banks to prove an adequate corrective. The situation presented by the business cycle requires the adoption of a policy that shall be in effective operation throughout the entire course of a period of business activity, a policy which takes account of the varying situation in particular industries and even of particular business concerns.

The general adoption by the banks of a requirement that business borrowers show an improving current ratio in periods of activity would furnish a corrective possessing all of these essential characteristics, and others as well. The fundamental reason for the adoption of the requirements of an improving current ratio is found in the gradual deterioration in the quality of current assets during the course of a period of business activity. To maintain a given degree of financial strength requires a gradual increase in the current ratio, or, which comes to the same thing, increasing deductions from inventory and receivable accounts. To take inventory at cost or market, whichever is the lower, is not sufficient at a time when there is a possibility of a decided shrinkage in merchandise values in the offing and a growing likelihood that collections will become difficult.

In the administration of this requirement of an improving current ratio, no precise rule can be laid down. As with credit analysis in general, account must be taken of differences in the position of particular industries and of particular concerns. The industries in which the tendency toward over-expansion is most pronounced are not necessarily the same in successive business cycles. In general, it may be assumed that an increasingly intense demand for all classes of goods at rising prices is in no small degree an unhealthy demand. To this proposition, there are of course individual exceptions, notably where there is definite evidence of new uses or markets for an article. There is however no good reason to suppose that for commodities long in common use there can be a considerable permanent expansion in consumption all along the line. In many directions there must be excessive competition for goods against which the banks should be on their guard.

Stock Exchange loans furnish a familiar precedent for the policy which should be adopted. When quotations advance to what are deemed unstable levels, the banks have long been accustomed to impose checks by requiring larger margins or by discriminating against particular securities. Under a similar policy as regards commercial loans, banks would lend a smaller proportion of the market price of staples as prices rise above accustomed levels (a practise which has sometimes been adopted in the past), and also insist upon a higher current ratio from manufacturers and dealers. To be really effective and to avoid disturbing consequences, this policy should become operative at an early stage in a period of prosperity. Business activity would not thereby be interrupted, though the intensity of activity would be somewhat moderated, especially in undesirable directions. It may further be confidently anticipated that periods of prosperity would be of longer duration and that the severity and length of periods of depression would be materially diminished.

THE FUTURE OF AMERICAN EXPORT TRADE

By JULIUS KLEIN

IT has long been a commonplace remark among observers of American economic development that this country has been at various times in its history "on the eve of a new era—in transition from one stage of economy to another, and so forth." The present situation of our foreign trade certainly offers ample ground for a repetition of this trite truism. The war has brought about important changes in international economic relations and contacts many of which are intimately related with the future of American commerce. Trade routes have been dislocated and readjusted by a series of dramatic episodes, such as (1) the destruction of Germany's colonial empire; (2) the elimination of millions of tons of merchant shipping of European ownership and the construction of other millions by the United States; (3) the killing off of thousands of skilled artisans and mechanics on the one hand and the stimulation of experts in new mechanical processes and hitherto unknown industrial technique on the other; (4) the extraordinary expansion of the productive capacity of American industry in all of its innumerable phases from flour milling to machinery manufacturing, from new textile processes to industrial chemistry; (5) the amassing of the bulk of the world's investment capital in this country; and (6) the collapse of Germany's closely knit system of commercial distributing agencies throughout the world.

An extensive monograph might be written upon each of these factors demonstrating its direct and vital bearing upon the development of our export trade. The latter is clearly undergoing a gradual but none the less fundamental readjustment as to its direction, as to the commodities which enter into it, and especially as to the prevalent conception of its relationship with the general economic evolution of the country. It is not the purpose of this paper to indulge in any hypothetical speculation as to whether these present and probable changes may be attributed entirely to the war-time upheavals mentioned above, or whether some of their causes took root in the normal succession of stages in our commercial progress. The fact is that our export trade now shows certain characteristics which were not conspicuously in evidence before the war and are clearly indicative of a future that will be sharply contrasted to its immediate past.

I. Recent Changes in Export Trade

It would be possible to survey the many ramifications of this subject from various angles. For example, there is the trend of our foreign-trade balance and the future reactions of our transformation from a debtor to a creditor nation. We might also speculate upon the rising percentages of our exports of manufactured or partly manufactured articles and the probable fluctuations of the major commodities of our export trade, especially the raw products of agriculture.

Then, too, there has recently been considerable comment upon the gradual shift of our export percentages from Europe to the markets of Asia and the nearby countries of the New World. During the three fiscal years immediately preceding the war Europe took an annual average of 61.2% of our exports. The peak of her relative importance as a market for American goods was reached in 1914-15 with a record of 71.2% of the total. There has

been a progressive decline in the relative importance of Europe as an export market since that time, her average annual proportion in the three-year period ending June 30, 1922 having been 55.7%. Though the absolute values of our shipments across the Atlantic will undoubtedly continue for years in excess of the pre-war figures, the steadily increasing. Our sales to Canada, relative importance of other markets is Mexico, Cuba and other North American neighbors (the second ranking group) averaged 23.6% during the fiscal years 1912-14, inclusive, fell to about 18% during the war, and since 1918 have returned to 23% and give evidence of a definite advance in the future. South America is also improving, though not quite so rapidly—her post-war share has averaged about 6.4% as against 5.4% before 1914, though the former figure was drawn down by an abnormal drop in the 1921-22 percentage (5.1% as contrasted with 6.1% in 1919-20 and 8.0% in 1920-21). The most significant progress, however, may be looked for in our Trans-Pacific markets. Their share of our sales during the three years just before the war averaged 4.9%, and since then they have gone forward to a post-war average for 1919-22 of 10%, reaching 11.7% in the fiscal year which has just closed. Our Asiatic markets are clearly the ones which are likely to grow in relative importance; the old "China trade" of historic clipper ship days is once more coming into its own.

Another series of factors which bear upon the future of our trade from this geographic point of view are the alterations in the routes followed by our imports of many basic raw materials and the consequent changes in the types of credits established in this country by potential foreign buyers. Instead of importing these commodities through European middlemen they are now coming direct to us from the producers, with the resulting changes both in the character of credits established in the United States and in the establishment of new routes for cargo shipping. For instance, before the war 41% of our block tin imports came from producing areas in the Dutch East Indies and the Straits Settlements and 53% from the United Kingdom. Today, however, over 70% of our tin comes direct from the mines in Southeast Asia and only 23% from the United Kingdom. Before the war we were getting about 35% of our total crude rubber imports from the United Kingdom and the remaining 65% largely from the rubber-growing areas in the East Indies and Brazil. Since 1920 the United Kingdom has been sending us only about 8% of our total crude rubber imports, while practically all of the remaining 92% comes from the producing regions of the Far East and South America. A similar situation is found in the trades in wool, cacao, furs, goat skins, and many other raw products which we are now buying very largely from the producers. This has developed a direct relationship between the United States and some of the most important potential markets overseas and has created contacts which are bound to have a considerable part in the coming struggle in the competitive market areas of the Pacific and in Latin America.

These interesting topics have, however, been exhaustively surveyed of late by competent experts and elaborate arrays of statistical data are readily available to justify this or that particular prophecy as to the future.

II. New Mental Attitude toward Export Trade

There is another and less obvious factor which is less frequently noted, though it will have a direct and vital bearing upon the development of our trade abroad. This may best be described as a new mental attitude toward foreign trade among American merchants and manufacturers. They are now as a group arriving at a point long since reached by a handful of early pioneers among them in appreciating the imperative need at this stage of our

economic progress for greater precision in plans for overseas marketing.

For nearly two decades American business men have been deluged with literature and convention oratory on this particular deficiency in our foreign-trade program—on the need for better packing, better credit policies, better export "paper work," and so forth. But it was not until the trade world had gone through the hectic experiences of the past few years that unmistakable evidence appeared to indicate the hoped-for change in commercial psychology. It is now, as never before, very generally realized throughout the commercial community of the country that foreign trade is a matter for calm, scientific calculation rather than for haphazard, opportunistic gambling, that exporting is not to be undertaken simply as a romantic adventure in the exuberance of prosperity or as an outlet for unsalable surpluses in periods of domestic depression.

The value of technique in foreign trade is being sensed for the first time beyond the restricted circles of those specialists who have long given it their exclusive attention. Government trade agents all over the world are reporting that "American packing is rarely below par and usually shows the results of scientific methods developed during the ship shortage of the war," that "the linguistic equipment of our salesmen has noticeably improved," and that "price quotations, credit terms and shipping arrangements are evidently being handled more expertly and are causing much less complaint than previously."

This growing scientific or "professional" conception of our export trade will be more and more emphasized as that trade accentuates its present tendency away from the self-selling staples (e.g. cotton, copper and other raw materials required for our expanding manufactures) and turns toward those articles of international commerce which require much more carefully planned merchandising, involving such details as patents, trade-marks, service stations, elaborate advertising, and so forth. The steadily increasing *relative* importance of our overseas trade in manufactured specialties, such as machinery, textiles, and similar lines which now comprise a third of our exports—the largest of the five great groups of commodities represented in our trade statistics—clearly means an intensification of this scientific approach toward export activity. This conception was, of course, in evidence in American exporting before the war, but it was almost entirely confined to a few large manufacturing concerns and commission houses. The significant fact today is its widespread appreciation even among thousands of small manufacturers, who a decade ago would have looked upon exporting as something utterly beyond their reach.

One indication of it is found in the extraordinary increase in the number of requests for specific facts on foreign economic conditions, commercial laws, tariffs, and so forth, which are now being addressed to the Department of Commerce. These queries have increased more than fourfold since the war, approximating at present about 3,000 a day. The American manufacturer with export aspirations now wants to *know* where he and his business are going. He is not to be misled by the glamour of Latin American El Dorados or the hazy mirages of far Cathay.

In other words, export is taking its proper place in the economy of the country as a well-designed stabilizer of business—as an essential part, small in some concerns and very large in others, of the commercial machine. It is not, and probably will never be, as imposing a factor in our economic life as it is in England. It does not require today more than about 15%, or at most 20%, of our total production. But there is a rapidly growing conviction that this moderate percentage is not by any means to be ignored. In fact, to a very large group of far-sighted manufacturers this margin means precisely the difference between profit and loss; it insures the maintenance of the full-time operation of

plants with consequent stability of wages, prices, transportation costs, and so forth. Export is, therefore, and will be more and more, a factor in modifying those dangerous dips in the curve of our industrial activity. To change the figure, it is being appreciated not as a panacea, but rather as a mild, sustaining stimulant to the industrial organism. The spread of this conception of foreign trade is one of the most reassuring aspects of the present commercial position of the United States.

The fear is sometimes entertained that our foreign-trade expansion along this line of improved technique might encounter discouraging obstacles in the shape of the superior experience and scientific equipment of many long-established, competing European export firms. As a matter of fact, the events of recent years have drastically modified many advantages which might in the past have been enjoyed by such competitors. The economic upheaval since 1914 has so profoundly altered the commercial situation, especially in the more competitive markets, that all exporters of whatever nationality are being compelled to make entirely new appraisals of their prospects.

This means the modification or even the elimination of a serious handicap against the thousands of American merchants to whom overseas trade is an innovation. Their European opponents, whose merchandising organizations in the trade centers of Latin America and the Orient have their roots in the dead past of that "other world" before 1914, must, like their recently arrived American competitors, build new trade structures from the foundations. All must adjust themselves alike to such basic factors as new tariffs, changed government commercial policies, radically altered shipping and financial problems, new demands on account of war-born industries, and the heavy loss of experienced personnel during the war. For once, the merchant who lacks a profound accumulation of trade wisdom based upon bygone practises and the experience of generations of his forbears, will not be invariably under a disadvantage. The complete wiping out of pre-war stocks and the stimulation of many new native industries, the consequent compilation of more than forty new protective tariffs around the world, the bankruptcy of thousands of old-time foreign agents and distributors, the establishment of new shipping lines—these and a score of other considerations have nullified many of the once valuable assets accumulated by widely known European traders. The American merchant, whose export plans are laid out with forethought and carefully studied accuracy, should be able to take care of himself.

From a psychological point of view, then, the status of American export trade in the estimation of the business community as a whole will improve, not simply because of its growing volume, but rather because of its improving solidity and stability. Almost all the phases of its technique are variable factors changing constantly in weight and relative importance. Those very considerable items in our exports which are made up of cereals, cotton, and other essential raw materials are bought by foreign customers with a minimum of effort in salesmanship on our part. But as our surplus manufactures increase, our export trade must be guided by the most effective kind of commercial intelligence. At a time when almost every country is changing drastically its tariff schedules and commercial laws, when there is confusion in exchange all over the world, when international competition resorts continuously to methods that before the war were neglected or unknown, there is more than ever before the necessity for a scientific approach to exporting. "Each commodity these days," as Secretary Hoover has indicated, "is indeed a problem in itself. Laws, customs, means and costs of transportation, and demand and supply vary with each commodity in each country of the world. The possible combination and permutation of the problem as a

whole, with its vast varying form from collection and credit in the Orient to pilferage and exchange in Russia, clearly reflect the imperative necessity for the largest possible cooperation by the Government and the business public."

III. Requirements for Future Development of Export Trade

As incidental to the encouragement of this new attitude toward exporting, there are patent efforts desirable in the present situation. One of them has to do with the spreading day by day of the largest possible range of commercial information about general conditions abroad. Others have to do with the thorough investigation of questions of packing, grading and inspection of goods previous to shipment, of credit and insurance facilities, of the economics of marine transportation, and the selection of foreign agents.

The last-named problem might well serve as an illustration of the complexity of new commercial factors following in the wake of the war and of the consequent necessity for scrupulous care in planning and the keenest searching examination of all pertinent phases of a given export program. Well-authenticated confidential advices received by the Department of Commerce indicate that a carefully disguised, extensive campaign is in effect in various parts of the world looking to the control of the merchandising of certain important American products by agents whose allegiance and interests are frankly foreign and opposed to any considerable expansion of American trade. There is clearly a need for abandoning the old pre-war practise of leaving the task of distributing American goods abroad largely to foreigners. The identity and control of American business abroad must be unmistakable and will require the expansion of the already well-developed network of overseas American agencies whose loyalty to American interests and appreciation of the spirit and genius of American industry is beyond question.

Until American commercial colonies—larger groups of well integrated merchant interests, warehousing facilities, trading organizations, and so forth, are more widely scattered throughout the ports of the world, there can be no substantial, soundly economic development of an American merchant marine. The sinews of England's shipping strength are made up, not of the picturesque, easily identified, expensive liner traffic, but of the roving, unobtrusive tramps whose dingy hulls may for years remain away from the waters of their home ports. They are kept busy with traffic provided through British commercial colonies scattered along every seaboard on earth. American foreign trade and the American merchant marine will thrive only with the stimulus that can be given by such thoroughly loyal sources of business and of traffic permanently established in the markets of the world.

More than ever is there imperative need of better American control of our goods in transit, especially through the use of our own banks and insurance institutions. The expansion of foreign-trade possibilities in the pre-war period had roused the interest of an increasing number of American merchants in the opportunities for foreign markets. Being American they wanted "action" — immediate results. They turned, therefore, to the first available facilities to aid them in the various processes of export. There developed, therefore, in many trade centers in this country a nondescript, cosmopolitan variety of foreign agencies, export promoting firms, and the like, many of which were fly-by-night concerns with little or no credit standing, but large enterprise, bold assurance, and impressive office stationery. The commercial cataclysm of the past year wiped out most of the flimsy, fantastic efforts of this motley crew and has left the ground clear for the construction of a more substantial, bona fide American trade edifice.

From 40% to 50% of our exports are now made up of commodities in the highly competitive field of manufactured or partly manufactured goods; and this percentage is increasing steadily. No nation can be successful in such an export trade unless it concentrates under its own national auspices all the auxiliaries of foreign commerce. As long as it pays tribute to foreign banks by a lack of well-equipped branches abroad of its own banks (not hastily though pompously installed under untrained managership with foreign staffs and without a thorough study of local needs); as long as it leaves the insurance of its exports in the hands of foreign companies by restrictive legislation which falls upon the head of its own national companies and agencies, it will not have mastered the fundamental problems confronting it.

Among the other auxiliaries of foreign trade of increasing interest to American merchants is the improvement of *credit instruments*. The letter of credit, or banker's exchange, has its legitimate place in foreign business, for under the present circumstances business cannot be largely increased by the exaction of cash terms. Irresponsible buyers, whether at home or abroad, will always have to pay cash, but the real business is done with responsible buyers, for which reason the cash fence between the approved foreign merchant and the exporter must give way to a connecting bridge that should be equal to the strain. It is, therefore, of prime importance that a foreign trade acceptance satisfactory to buyer, seller, and banker should be devised. Mr. Robert H. Treman, formerly Deputy Governor of the Federal Reserve Bank of New York, declares that the United States is the only country in the world where sellers of goods finance buyers by borrowing money themselves to extend indefinite credit to their customers. The trade acceptance is scientific and will tend to make the untrained tradesman less of a menace to his competitor who does business on sound methods. Commercial loans have been shown by the banking experience of many years as the safest of all temporary investments. The "two-name" commercial credit, in other words, the trade acceptance, is one of the most liquid and satisfactory forms of such paper, and much of America's future progress in foreign trade depends upon the speed with which our merchants become accustomed to it.

To devise a foreign trade acceptance as suggested would be to eliminate much of the risk attending the old custom of drafts with documents attached. Confidence must be established between the buyer and the seller. If we do not give credit, we are hopelessly at the mercy of our competitors. The activity and success of our mercantile agencies, credit men's associations and newly established credit insurance organizations are promising indications of improved prospects in this field. Unless this problem of *intelligent*—not necessarily liberal—credit is solved we shall not be even followers in foreign trade, but just sit still and sell only that which our customers cannot get elsewhere. Thus one of the great incentives to our foreign trade will come with the encouragement of efficient commercial banking, credit reporting and insuring by American personnel trained in foreign business and competent to blaze the way of leadership instead of being content with half-hearted imitation or haphazard dependence upon convenient short-cuts under non-American—frequently anti-American—control.

The future of American overseas commerce is linked inseparably with the expansion of our productive capacity. Supremacy in foreign trade, as in domestic trade, rests ultimately upon the basis of a superior industrial organization. Back of all our efforts in markets abroad there must be, first of all, the ability to produce more goods of salable quality than our rivals. The export trade of this country may face the future with an abiding faith because our industrial leadership has long been established in a number of important

commodities of international commerce, even though that leadership has not been generally appreciated. In such basic commodities as coal, pig iron, steel, leather, boots and shoes, and electrical machinery, our annual output before the war was considerably in excess of the combined production of our two great rivals, the United Kingdom and Germany. Even in cotton manufactures we were rapidly threatening the leadership of England in total production when the war broke out.

England's mastery in foreign trade arose primarily from her superior productive capacity which grew out of her pioneering experiments with the factory system; and the latter was given its greatest impetus by the imperative demands of the last world war previous to the recent one. The chimneys of Manchester were indeed the guns that won the battle of Waterloo—and subsequently conquered the markets of the globe. The enormous expansion of our total productivity in all lines of industry since 1914 has emphatically "accentuated the base superiority of" America's industrial capacity. As the need arises for the overseas disposition of consequent surpluses in one line or type of product after another, we shall see renewed evidences of that adaptable ingenuity and energy which have for generations been the inspiration of American economic effort.

CREDITOR'S COMMITTEE RECEIVERSHIPS

By ARTHUR STONE DEWING

COMMITTEES of creditors have assumed importance in the treatment of business difficulties. In fact, one of the important, if not the most important differences between the procedure in connection with business failures that distinguishes the cyclic reaction of 1920 as compared with all previous panics and depressions, was the extended use of creditors' committees rather than court receivers. This extended use may merely represent the swing of the pendulum away from the formal and somewhat destructive procedure under petitions in bankruptcy or bills in equity, or it may presage an entirely new era in the treatment of embarrassed businesses.

The term "Creditors' Committee" is a generic one. It is used to apply to the management of bankrupt or financially embarrassed businesses by creditors, a committee of creditors, or an individual given creative powers and whose position and functions are quite accurately described by the term "Business Doctor." Such a committee is always chosen by the important creditors—who are generally bankers —with the tacit consent of the owners or managers of the embarrassed business.

The Problem of the Financially Embarrassed Business

The problem of dealing with the temporarily embarrassed business has great social and economic importance. It is a problem of economic conservation incident to mitigating the intensity of booms and panics, to leveling business activity and tempering its fits and starts. That some kind of widely acknowledged and easily applied method of dealing with embarrassed businesses must be available to the community during times of storm and stress is too obvious to need comment. The widespread recognition of the importance of the so-called business cycle has emphasized the susceptibility of business enterprises to the fluctuations of general economic conditions. We know that a business may be in temporary difficulties through lack of executive foresight while it is at the same time fundamentally profitable and sound. Such embarrassments arise by reason of the failure of executives to think as economists, to interpret correctly cyclic changes in the operation of the race-old law of supply and demand. But unfortunately — unfortunately perhaps more for society than for themselves— otherwise able executives are not economists. They suffer from a kind of myopia resulting from a concentration of vision upon their individual business problems. Unobserved by them and unprepared—in their fools' paradise of seeming prosperity —cyclic changes of the general economic background visit upon them sudden embarrassment.

The hard and fast line of separation between a clearly successful and a failed business, admitting no twilight zone, or shades of grey, does not exist, if it ever did exist except in the archaic vocabulary of business law. And to force all businesses, whether public or private in character, through the bankruptcy court because they cannot find the means at some crucial time to pay their obligations, involves economic waste—omitting the individual injustice—which our present social order cannot tolerate. Accordingly, the court receivership and the creditors' committee receivership have developed as methods of meeting a situation where the traditional legal processes are ordinarily

destructive and socially wasteful. The business community with the help but not the promptings of the law developed in the latter part of the 19th Century the court receivership as the constructive method of handling individual business crises. And the increasing coherence and interdependence of all businesses large and small has accentuated the importance of the court receivership. In its own terminology it is "an extraordinary legal process" for conserving social resources. All this is obvious; but a further question has developed whether or not buiness executives solve their own problem without even the form of such legal assistance. For it is a matter of considerable social importance to decide whether an embarrassed business can be managed better by a court or by a committee of creditors.

The surrender of an embarrassed business to a committee or individuals chosen by the creditors and possessing full executive power voluntarily extended to it by the old proprietors of the business stands in sharp contrast to the ordinary court receivership. Neither the creditors' committee, nor the responsible executive acting under it, possesses the legal power necessarily held by the court receiver. On the other hand, the creditors' committee and its executive possess, far more than the court receiver, a freedom of action, a quickness of response and a ready adaptability to the kaleidoscopic changes of an embarrassed business. Such mobility and quick resourcefulness cannot practically nor even conceivably be given to a receiver appointed under our present equity practise. The court receiver is, no doubt, fortified by the ultimate sanctions of the law, but he suffers by reason of the law's slowness of reponse and by his knowledge of legal precedent rather than business expediency. The creditors' committee receiver, on the other hand, has no power but that voluntarily given him, but he has the nimbleness of a free agent. The purpose of this present study is to consider, historically and critically, the creditors' committee method for the solution of business difficulties.[1]

The Development of the Creditors' Committee Method

Relatively new as is the creditors' committee receivership in its present widespread use, the device of turning a business over to a committee of creditors, at a critical juncture in its history, has been tried many times in the past. These early instances were confined to small businesses, and the bankers were but little concerned in the creditors' management or in the outcome. They took the attitude that if someone other than the proprietor could work out a solution to the difficulties, they would ultimately get their loans paid. If not, they could at least put the business through the bankruptcy court, in which case they would be no worse off, probably, than if there had been no friendly efforts to prevent acknowledged failure. In the case of the threatened failure of a large business, certain creditors would endeavor to effect a compromise with others; and in many cases, even after the appointment of

[1] Part of the material of this study and the facts from which the generalizations are derived are drawn from the writer's own observation and personal experience; part is derived from the replies to a set of questions submitted to the presidents of 50 of the larger banking institutions in the different commercial centers of the country. In order to elicit specific replies, the following rather concise questions were submitted in the form of a questionnaire:

1. "With reference to the business failures and embarrassments that came under your observation, what proportion were taken care of by committees of creditors rather than court-appointed receivers?
2. Did you serve personally on any of these committees, and if you did, what was your observation of the way they worked?
3. Did the committee ordinarily handle the business itself, or appoint a "Business Doctor" to act for them?
4. Do you think these creditors' committee receiverships have been on the whole an improvement over the court-appointed receivers?
5. What in your observation was the greatest advantage of these creditors' committee receiverships? What their greatest disadvantages?"

The replies will be referred to in the course of the discussion as questionnaire replies. It was a matter of great surprise that so large a proportion of illuminating replies were received and that the results they indicate were as uniform as they seem to be.

court receiverships, committees of creditors would seek to effect a general compromise without subjecting the property to a foreclosure sale under a decree of the court. And this applied to large as well as small enterprises. In the period from 1883 to 1887, court receivers were appointed for numerous small railroads—and were later discharged without subjecting the property to a foreclosure sale. In the decade from 1889 to 1899 there were no less than 20 railroad systems—including the Baltimore and Ohio and the Missouri, Kansas and Texas—which were reorganized without foreclosure. These roads aggregated between four and five thousand miles of line, and represented over $300,000,000 in securities.

Notwithstanding a growing tendency on the part of the creditors of an embarrassed business to work in harmony with the purpose of carrying on the business as a kind of trust estate rather than liquidating it through the bankruptcy court, it was not until the period following the panic of 1907, and particularly since the Great War that creditors' committees have come into prominence. Certain sections of the country, particularly New York, had developed the creditors' committee method of solving business difficulties more than elsewhere. In the south and southwest the method had been seldom used; and even in New York it was not tried unless the conditions appeared to be markedly favorable for its success.

During the period of business readjustment following the Great War the creditors' committee method of dealing with embarrassed businesses of considerable size became well nigh universal in all parts of the country. My attention has been drawn to the case of a western bank which had representatives on 88 committees at one time. So general, indeed, did this course become that such phrases as "in the hands of the banks" or "in the hands of the creditors" almost entirely superceded in the vernacular of the street the old phrase "in the hands of a receiver." Undoubtedly still the court receiver was used in certain sections of the country, even for large failures, when the advantages of the creditors' committee were not understood; but taking even these exceptions into account, it is no exaggeration to say that three-quarters of the business embarrassments since the Armistice, involving more than a hundred thousand dollars of liability, were handled by committees of creditors rather than by court-appointed receivers.[2]

There are two circumstances that together very largely explain the prevalence of creditors' committees during this last crisis. These had to do with the manner in which the reversion of prosperity affected individual businesses and with the influence of the federal banking system. Business difficulties were largely concerned with a sudden stoppage of sales accompanied by a fall in inventory values. The Federal Reserve System gave the banker-creditors a feeling of confidence in their own powers of resistance which enabled them to continue and sometimes increase loans to embarrassed businesses.

The elementary and fundamental causes of business reactions are probably the same whether we consider the nineteenth or the twentieth or any other century. But there are certain external and conspicuous signs of general family resemblance which mark most of the embarrassments occurring at any one crisis. It was the presence of excessive inventories and contracts to purchase raw materials, all based on inflated war prices, which characterized a very large percentage of the embarrassments. Tanneries were overstocked with costly hides, at a time when leather could

[2] In answer to question 1 of the questionnaire (see footnote 1) all replies except two, stated that creditors' committees had been used in most cases for embarrassments of large businesses. Of these two, one, from a Pacific Coast city, stated that they were used but little and the other estimated "about 40%." The remaining replies varied from "more than 50%" to "100% of the large failures." Twelve banks stated their estimate in terms of percentages, 1—40%; 1—70%; 1—80%; 1—90%; 1—95%; 2—100%; average 81%.

be sold only at prices below the cost of production, paper mills had great wood piles while the price of the finished product was falling precipitously, merchants had their shelves loaded with costly inventories when the public would buy, if at all, only at pre-war prices. Meanwhile the running expenses of the business continued. And meanwhile loans at banks and acceptances in the hands of mercantile creditors fell due. It was as if a stroke of paralysis had suddenly gripped the natural currents of business enterprise.

The condition of the banks was a factor of great importance. The reversal of business of the autumn and winter of 1920 was the first so-called panic since the establishment of the Federal Reserve System. And although the policy of the Federal Reserve Board, dominated presumably by petty political motives and sectional prejudices, was very largely responsible for the inflation period to which the costly inventories owed their origin, the machinery of the system itself provided the means to enable banks to extend help to overextended businesses. Heretofore, in the presence of a sudden reversion, institutional banks must needs look first to the maintenance of their own credit, even though deserving customers were thrown overboard. By means of rediscounts the credit cover could be made to expand suddenly to protect customers; and this placed at the disposal of banks a means of alleviating the distress, provided the fundamental and abiding principles of sound banking permitted. The banks had the power at their disposal; it was merely a question of economic expediency and banking wisdom. And the creditors' committee, formed for the purpose of carrying and eventually liquidating the costly inventories, was the bankers' well nigh universal response. Had they not made this response, business mortality in the autumn and winter of 1920 would have been simply stupendous. But one cannot say that the Federal Reserve System was entitled to the credit for the services rendered to the community by the creditors' committee during the crisis, for had not the system contained the easy means for inflation and overexpansion, there would have been vastly fewer business embarrassments due to inflated inventories and far less necessity for creditors' committees or any other palliatives. The bacilli in the system generated the toxins for their own cure. But a healthy organism would prefer not to have the disease, even though the disease, self-limiting as it were, created the means for combating its ravages.

The Formation and Operation of Creditors' Committees

The formation and operation of the typical creditors' committee may be very briefly summarized. A business enterprise engaged in the conversion of a raw or semi-fabricated material into a finished product[3] found itself suddenly confronted with a recession of new orders. Quite often this sudden stoppage of new business was accompanied by cancelation of orders and the bold repudiation of contracts. Suddenly, too, the prices at which the finished

[3] Creditors' committees were by no means confined to manufactures nor did all manufactures seem to suffer alike. Businesses engaged in the manufacture of a luxury or building material requiring the purchase of large stocks of raw material and requiring a considerable period for the conversion were in the most serious plight—automobile tires and fabricated lumber for illustration. On the other hand such industries as meat packing were able quickly to shorten sail and adjust themselves to the relatively small curtailment of consumption. No water, electric, or gas company of importance passed into the hands of a creditors' committee in the autumn and winter of 1920—their time of storm and stress was during the preceding period of rising prices. And creditors' committees were then extensively used. One must remember also a general depression creates a crisis in innumerable mismanaged businesses, which had maintained themselves during the period of inflation and rising prices. They sink, or should ordinarily sink, in the first squall. But during the period in question they were kept alive by creditors' committees, the members of which were unable to distinguish at first between businesses fundamentally sound and those which should be closed. Creditors' committees were often used to manage the affairs of embarrassed individuals as well as partnerships or corporations. For example, it was used to protect a man who speculated at the same time on the stock market and in real estate.

goods could be sold, if at all, on the open market, fell precipitously; and at the same time the replacement value of the raw materials in the warehouses and those being taken under old contracts showed astonishing losses on mere inventory adjustments. In the statements to the banks, large surpluses of the preceding year were either entirely extinguished or else very much reduced. Businesses could no longer show the requisite ratio between quick assets and outstanding loans, so that the banks, naturally timid in the presence of a sudden crisis, demanded either a reduction of borrowings or else an increase in resources. Sometimes the proprietors put in themselves more money from their private funds, sometimes the business was able to sell or mortgage fixed assets, but more often nothing could be done. If the bankers forced the distressed business to liquidate its salable assets, the proceeds would not pay the loans; on the other hand if the business could be continued and the raw materials gradually realized upon in the form of the finished product there was hope that the loans could be met ultimately.

Such was the condition in which the distressed business and its creditors suddenly found themselves. The enterprise could be liquidated from within or by the bankruptcy court, but the loans could not be paid; on the other hand the enterprise could be continued and the loans might be paid. But to continue the enterprise new money must be subscribed by someone to meet the payroll, fixed changes, and the continuing overhead. This the banks could do, by reason of the Federal Reserve Banking System, provided they should be fully protected in the new money advanced; and this could be done only if the then existing creditors, with one accord, consented to subordinate the existing debts to those represented by the advances in money. This, of course, involved their extension. But, again, they would agree to this subordination only if they controlled the business, particularly the financial policy. While the larger bank creditors were usually looked upon to supply the new money, the practise was followed, in many cases, of assessing all the creditors in proportion to their claims. Ultimately all the advances would fall back on the Federal Reserve System because the mercantile creditors would obtain their share of the new money from the banks which would, in their turn, rediscount the paper, and even when the new money was obtained by proportionate assessments the banks practically always had to assume one or more of the assessments which a mercantile creditor, himself embarrassed, could not meet. The creditors' committees came into existence, therefore, to make articulate this control.

The formation of a creditors' committee for the management of an embarrassed business involves therefore three conditions. The existing creditors subordinate and extend their claims, banks advance sufficient new money—entitled thereafter to a prior lien—to continue the business and the management passes to the control of a committee chosen from among the creditors. From the legal standpoint these three conditions may be embraced in a single tri-partite agreement as between the stockholders or proprietors of the business, the general creditors who extend and subordinate their claims, and finally the bankers or the managers of a banking syndicate who propose to advance the new money. Or there may be a series of agreements entered into as one condition after another has to be met. At all events the original agreement provides that as soon as all the debts have been paid, or adequately provided for, the business shall be returned to the proprietors.[4]

[4] In order to make this record complete I am inserting a simple form of creditors' agreement which was used to secure the control and extension of debts in the case of an embarrassed electric light company. The names have been changed, otherwise the document is the same as used.

The Essex Electric Trustees of Ohio represented the holding company for the four electric companies. In order to secure administrative control of the entire

The membership and personnel of the committee varies greatly. Five is the most frequent number, although committees of as few as three and of as many as seven and nine members are met with. Unquestionably the smaller the membership the more efficient the work of the committee proves to be,[5] but it was often necessary to include all the large creditors in order to enlist their support and cooperation. In the case of large creditors' committees it was customary to select a small executive committee which met frequently and carried the detailed responsibility of the business. Again this executive committee often managed the business through its chairman. Various methods were pursued by creditors' committees in the management of the embarrassed business. In actual practise the representatives of the large banks, especially those which subscribed new money were the most influen-

[5] In the answers to question 5 of the questionnaire (in footnote 1) the most frequent objection to the creditors' committee was the clumsiness of dealing with intricate business problems through a large committee of otherwise busy men. This difficulty is undoubtedly real and represents perhaps the most serious objection to the use of creditors' committees.

Footnote 4 continued from page 35:

organization, a majority of the stockholders of the Essex Electric Trustees created a voting trust of which three of the creditors—Messrs. Field, Wald, and Shedd were the appointed voting trustees. This document was the ordinary voting trustees' agreement and need not be reproduced.

In addition to the five large creditors who signed at the end of the agreement, three other smaller creditors with debts aggregating less than $5,000 signed at a later time. Money was provided by assessment on all the parties signatory to the agreement which was used to pay off, at approximately 40 cents on the dollar, all the smaller creditors whose claims were less than $1,000 and one claim of $2,500 was compromised in the same manner. In addition to the amount requisite to compromise these smaller claims, money was advanced by assessment to operate the companies. Altogether $47,000 was so raised. In return for the assessment the first mortgage prior lien 7% bonds were given at par. These bonds, obviously, were a first lien on the entire property and came prior to all the claims.

It should be noted that this particular agreement ran for a longer period than was usually the case with embarrassed manufacturing or mercantile businesses. It being a public utility, it was felt that a longer time would be required to either put the company on its feet or else to sell it.

THE UNDERSIGNED CREDITORS of the companies named below in ARTICLE 1 hereof (hereinafter referred to as the Companies) in consideration of $1.00 and other valuable considerations to each in hand paid, receipt whereof is hereby acknowledged, do hereby SELL, ASSIGN, TRANSFER, SET-OVER and CONVEY to Fred Field, Albert Wald, George S. White, Byron D. Black and Warren Shedd and the to as the Trustees), all their several claims against survivors and survivor of them (hereinafter referred the Companies (the amounts and nature of which are or may be set after their respective signatures) *in trust*, nevertheless, for the purposes and upon the terms as follows:

ARTICLE 1. The names of said Companies are as stated below in this ARTICLE 1 and they are or may be designated in the column headed "Debtor Companies" at the end of this assignment by the letter preceding such Company in this ARTICLE 1.

A—Tremont Electric Light Company
B—Paris Electric Light & Power Company
C—Service Electric Light Company
D—Lafayette Electric Company
E—Essex Electric Trustees of Ohio

ARTICLE 2. This assignment is made for the purpose of allowing time and opportunity to work out a reorganization, rehabilitation or readjustment of the Companies or any of them in such manner as to the Trustees, in the exercise of their best judgment, shall seem best for all parties to the end that the claims hereby assigned may be paid or discharged.

To the end stated in the next preceding paragraph the Trustees are hereby granted full power to deal with the claims hereby assigned in their absolute discretion and as if they were absolute owners, including, without limiting the generality of the foregoing, the right to take such action as they may see fit for enforcing such claims or to delay taking such action; to compound, compromise, allow time for payment or extend the time for payment of such claims with or without taking bonds, notes or other evidences of indebtedness or security for the same; to take stock, bonds, notes or other securities of the Companies or any of them in exchange for or in place of the claims hereby assigned, or any of them; to permit or cause or suffer the Companies or any of them to incur future indebtedness and other liabilities for operating expenses, additional capital requirements, and other purposes, which new liabilities may have priority over the claims hereby assigned; to pay, or permit or cause or suffer to be paid or secured in priority to the claims hereby assigned any other claims now existing against the Companies or any of them and in general to use the broadest discretion in dealing with the claims hereby assigned to the end that the Companies may be reorganized, rehabilitated or readjusted financially, *provided, however*, that no claim hereby assigned shall be dealt with as to give any claim hereby assigned priority over any other claim hereby assigned, but only so that all shall be upon a parity and shall be entitled to share pro rata in the proceeds of any payments made to the Trustees on account of any such claims and in any securities received by the Trustees.

tial members of the committee and usually dictated the policy. So frequent, indeed, were the sudden embarrassments confronting the customers of large metropolitan banks that a few of these banks established a department, under the supervision of an officer, to which business troubles and so-called "frozen loans" were referred and which acted itself as a creditors' committee or else represented the bank on all such committees. In a few cases, where large commercial banks found themselves confronted with many cases of distress this department suddenly became large and important, with one of the highest vice-presidents in charge. He was assisted by a varied staff of lawyers, accountants, engineers, and so-called efficiency experts. Quite often when a bank having such a specially organized department was a large creditor, the other creditors merely withdrew and the bank's "sick business" department acted as the creditors' committee. Sometimes, again, the committee would delegate its powers to a single individual who made it his business to rehabilitate embarrassed business. Such persons have sometimes been alluded to as "Business Doctors." Frequently they were the paid employees of large banks; or they worked under a general retainer fee from several banks. Either a member of the committee or the "Business Doctor" became an integral part of the organization of the embarrassed business. This representative of the creditors, sometimes as treasurer, sometimes as comptroller, sometimes merely as a kind of inner office advisor, passed on all matters covering the routine management of the business. He acted as trustee for the receipts of the business and arranged that all the creditors should be dealt with alike and in accordance with the provisions of the creditors' agreement. After the continued observation of this representative the

Footnote 4 continued from page 36

ARTICLE 3. Any payments made to the Trustees or any of them on account of any of the claims hereby assigned shall be a full discharge thereof in accordance with the terms of such payment and the person paying shall not be under any obligations to see to the application of the money so paid.

ARTICLE 4. The Trustees may act by a majority with or without any meeting of the Trustees and any Trustee may resign by delivering his written resignation to the other Trustees or any of them, and the Trustees as at any time constituted may appoint a successor to fill a vacancy caused by resignation, death or other disability.

ARTICLE 5. The Trustees may take advice of counsel in acting under this instrument and shall be absolutely protected in acting upon such advice, and the Trustees shall each be liable only for his own wilful malfeasance or default and not for that of any other Trustee or for any act or omission in good faith.

ARTICLE 6. It is the intent of this instrument that it shall be interpreted liberally to the end that the Trustees may have the fullest and broadest powers, rights and discretion in dealing with the claims hereby assigned for the purpose of reorganizing, rehabilitating or readjusting the Companies or any of them to the end that the claims hereby assigned may be paid or discharged.

ARTICLE 7. This trust shall terminate on June 5, 1924, and a majority of the Trustees may terminate it at any time prior thereto, and upon its termination the claims hereby assigned shall be reassigned to the assignors if the same are then in their present form, but if any thereof have been paid or exchanged for bonds, notes or other obligations, or otherwise changed in form then the signers hereof shall be entitled to share in all the property then held hereunder pro rata and the Trustees may allot the same in their discretion and may determine in their absolute discretion the value of the same for the purposes of such allotment and may sell all or any part for the purpose of allotting the proceeds in money and every such allotment may be made upon terms of such sum or sums as the Trustees shall think proper being paid or allowed for equality.

In witness whereof the undersigned have hereunto set their hands and seals this 5th day of June, 1919.

Name of Creditor

OHIO POWER COMPANY
By Charles S. Warren, Pres.

WASHINGTON TRUST COMPANY
By Richard W. Patterson, Treas.

BROWN-VARNEY COMPANY
By William M. Lawrence, Treas.

MANSFIELD TRUST COMPANY
By Harold H. Roberts, Treas.

CLINTON ENGINEERING COMPANY
By John T. Weston, Pres.

Letter Designating Debtor Company	Amount of Debt	Nature of Debt
....	$52,000	Power contract
....	26,000	Loans (demand)
....	35,000	Merchandise
....	45,000	Loans—time and demand
....	17,000	Construction contract

creditors' committees are able to determine whether the business shows clear evidence of recuperation or should be liquidated.[6] If the former decision is followed the committee continues its administration until the debts are all paid or the business reorganized according to a plan proposed by its members. And if the business is reorganized and the creditors forced to take securities instead of money, the committee will supervise the reorganization and dominate the board of directors of the new company.[7]

Creditors' Committees versus Court Receivers

We are now to consider the relative advantages and disadvantages of creditors' committee receiverships as compared with the more formal court receiverships. At the outset we should weigh carefully three distinct powers which the court and the receiver appointed by it may exercise that neither the creditors' committee nor their representative can exercise. A court receiver may repudiate or set aside existing contracts of the business which he considers unprofitable; a court may set aside and exclude from participation in the final reorganization those creditors whose proof of their claim is inadequate and finally, the taking over by a court of equity of the administration of a business precludes further actions by all creditors, those who were not parties to the motion under which the court assumed jurisdiction as well as those who were. Chiefly in these three particulars, I take it, lies the peculiar and vital effectiveness of an equity receivership. Other differences of the nature of peculiar powers which the court receivers possess, not possessed by the creditors' committee, may be cited, but they are of less real importance, except in special cases.

Many businesses become embarrassed because of unfavorable contracts. Many businesses have in the past gone into the hands of court receivers in order to permit the receiver to repudiate an unfavorable contract.[8] Cowardly though such a proceeding may appear, in the light of an enlightened code of business ethics, the

[6] The practise of employing a professional "Business Doctor" varied greatly. Banks and creditors' committees in Boston employed such persons quite frequently; this was true also in New York when the liabilities were large, the problems intricate and the number of creditors large. It is undoubtedly true, however, that the use of the so-called "Business Doctor" has been much exaggerated. A little over half of the banks reporting under question three of the questionnaire stated that the professional "Business Doctor" was not used at all within their observation. The others reported that he was consulted on certain problems, or else was definitely employed in a few cases. Only one bank reported the regular employment of a "Business Doctor" by creditors' committees under their observation. A few comments in regard to the so-called "Business Doctor" in answer to question three of the questionnaire show the attitude of some banks. "'Business Doctors,' so-called, charge a very high fee and give a poor quality of service." "The idea of 'Business Doctors' has of late been losing popularity due to the fact that the New York banks, under such circumstances apparently dominated the 'Doctor' and the recovery under such treatment has not always been beneficial to banks not located in the metropolitan area." The suggestion, contained in this last statement, of lack of cooperation or unfairness, is somewhat unusual, as one of the most conspicuous results of the whole creditors' committee receivership movement seems to have been the development of cooperation and mutual confidence among the banks. However, individual experiences may have given different evidence.

[7] In the case of the Moline Plow Company of Illinois, a reorganization of a large embarrassed industrial business, bankers of Chicago and New York dominated the creditors' committee, prepared the plan of reorganization, carried it through and acted as trustees of the securities of the new company. The reorganization was eminently fair to all concerned and very economical; the whole cost was less than 1% of the credit obligations. There was no underwriting by investment bankers and therefore no underwriting commissions. Over 97% of the stockholders voluntarily assented, all the floating debt holders (except a few of the smaller ones paid off), and practically all the serial note holders. Altogether it was a complicated situation carried through with great skill.

[8] A considerable proportion of the court receivers appointed during the autumn and winter of 1920—the period of storm and stress—were appointed, not only because of the fall in the market price of inventories, but because of outstanding contracts to purchase large amounts of raw and semi-fabricated material. Fearful of the impending rain, and often prompted by bankers who saw the inevitable outcome, they resorted to the court as a legal expedient for mitigating the severity, if not wholly repudiating their destructive contracts.

managers often found themselves confronted by an unfortunate predicament. If the terms of the burdensome contract were lived up to, the fundamental assets of the business would be exhausted. The rightful claims of other creditors who had extended credit to the business on the basis of its continued solvency were in jeopardy. Although technically the business was, at the time, solvent, the continued execution of the burdensome contracts would result in its insolvency so far as the other creditors were concerned. Yet these other creditors were powerless to act on their behalf because their claims could not then be reduced to judgment. Under such circumstances the managers of the business, in good faith and prompted by laudable ethical motives, moved for the appointment of a receiver for the sole purpose of throwing the responsibility for repudiating the burdensome contract upon the court. Such a procedure is on the whole just; there is nothing highly moral in living up to the terms of a burdensome contract, if, as a result, other creditors suffer.

Granting that the immediate cause of the financial embarrassment is the burden of an unfavorable contract, it is difficult to see why a committee of creditors could not effect an equable settlement more easily than a court receiver. As a matter of course the holder of the unfavorable contract would be a member of the committee; and he would be conscious, throughout all the negotiations, that arrant obstinacy would be followed by the appointment of a court receiver. Business men are, by training and experience, conciliatory. Moreover, the holder of the burdensome contract would prefer to retain the goodwill of the managers of the embarrassed business and the banking community rather than be the direct cause of forcing public disaster upon an otherwise solvent business. This is a matter of importance because the direct and explicit relief from a burdensome contract constitutes the most positive power a court receiver possesses not held by the creditors' committee. And if it appears that a creditors' committee can deal with such a situation more effectively than the court receiver, then the apparent necessity and usefulness of the ordinary court receiver is very much lessened.

The second clear advantage that a court receivership has over a creditors' committee is that a court of equity can review with great thoroughness the validity of creditors' claims. Questionable claims, especially, if based on bogus transactions, can be easily eliminated and excluded from participation in the proceeds of a subsequent sale or reorganization of the business. Here, as in the case of a creditor holding a burdensome contract, the ultimate power of the law has a finality not possessed by a committee, however hard the motive of expediency may be stressed.

This finality, however, can be secured ordinarily by an appeal of the ordinary processes of the law, without requiring that the whole business shall submit itself to a receivership.[9] A creditors' committee, moreover, can adjust and "Compromise" doubtful or excessive claims; it can "trade off" a certain liability against an uncertain asset.[10] It can weigh all these matters with a more accurate and decisive judgment than could the ordinary equity receiver. And a committee skilled in the artifices of adjustment can quite often effect a cheaper settlement of a claim which has legal validity but, because of business reasons, may be compromised. In other

[9] See Footnote 12.

[10] In one instance a creditors' committee chosen to operate a small paper mill effected an exchange of a strip of timber real estate which could not be sold or mortgaged, because of a defective title, for the cancelation of a considerable contract to deliver pulp wood at $19.40 a cord when the current market was then $11.00. After this particular "trade" was effected, the committee had no difficulty in arranging for the extension of all liabilities exceeding $5,000. The large liabilities having been taken care of, two bankers on the committee consented to advance to the company $25,000 each. The new money was sufficient to pay all the debts under $5,000 and to furnish sufficient quick assets until the time when enough money was forthcoming through the sale of manufactured paper.

words the settlement of doubtful and excessive claims against an embarrassed business can be more quickly and often more cheaply adjusted by a creditors' committee.[11] And if satisfactory settlement cannot be arranged there is the ordinary procedure in law and equity to fall back upon in individual cases without throwing the entire business into the hands of the court.[12]

There remains, then, the third important advantage that the court receivership has over that of the creditors' committee. When a court assumes jurisdiction over the affairs of an embarrassed business all actions by recalcitrant creditors are stopped. The wolves are held at bay. And this applies to the large as well as to the small creditors; to matured claims as well as the unmatured; to secured as well as unsecured. The business can catch its breath. It can put its house in order beyond the clamor of threatening creditors and do this quietly and peacefully under the mantle of the court whose protecting arm extends to all jurisdictions. This is a very great advantage which the court receiverships possess over that of creditors' committees. There is no minimizing its importance or pretending that creditors' committees can hold recalcitrant creditors in line by other sanctions than that of persuasion. Business men may urge a creditor to "play in with them" and because of their prominence it may appear expedient for the creditor to do so. But the creditors' committee can exert no real restraint. On the importance of this actual power to maintain the "statu quo" among creditors rests the unquestioned advantage of the court receiver. The whole issue, as between the creditors' committee and the court method of handling business crises, resolves itself into the relative importance of this advantage.[13]

Advantages of Creditors' Committees

We now turn to the other side of the picture. Although the advantages of creditors' committees over court receivers stressed by different bankers ran along common lines the advantage or rather result of the creditors' committees which I consider most notable was brought out only in a few replies. It is the effect on the general economic situation. Cooperation and mutual confidence have been engendered throughout the business community by the very necessities involved in making the creditors' committees function. Shrewd bankers knew that a business could not be administered by a debating society; if the actions of the committee were to be affected by friction and petty jealousies, its

[11] An attorney arranged for the sale of certain of a corporation's assets for which a large commission was agreed upon but remained unpaid. After the affairs of the corporation had been taken over by a bankers' committee, it developed that the attorney's firm acted as the regular counsel for a trust company represented on the bankers' committee by its president. The trust company held a large claim against the embarrassed business. Because of the close relations, the president was able to settle for about 35% of the stipulated amount, notwithstanding the fact that the attorney could have undoubtedly proved his claim in an equity receivership and the total property of the embarrassed corporation far and above exceeded 35% of the total liabilities.

[12] A good example of a kind of adjustment which gave to all parties the advantage of judicial rendering, without resort to a receivership, is represented by the following incident: A committee of creditors had taken over the affairs of a small public utility. The floating debt, represented by bank loans, personal loans, merchandise debts and unpaid power bills, amounted to more than twice the value of the property by any method of valuation. The net earnings were next to nothing. One of the embarrassing features of the whole situation was that a party, not a member of the creditors' committee and mildly antagonistic to it, held what he alleged to be a mortgage lien on certain essential parts of the public utility property. He threatened to apply for a receiver unless his claim was given priority over all the rest of the floating debt. The creditors' committee offered to appropriate a sum, not exceeding $500, to defray the legal expenses incurred by the creditor in an equity suit designed to determine whether or not his claim represented a prior lien on the physical property. Such a solution would have all the decisiveness of a proof of claim proceeding under an equity receivership and it would in no wise embarrass any other activities of the creditors' committee.

[13] This is stressed by the answers to question five of the questionnaire referred to under footnote 1. Practically all the bankers replying stressed the great difficulty experienced in keeping all the creditors in line.

end would be defeated. Bankers were forced to work together, and in harmony with conflicting interests. This is an intangible result, but it is one of far reaching and permanent consequence. And this cooperation and mutual confidence sprung—like the citizens' committees of the western frontier—from the necessities of self-protection. There were no mutual uplift motives, wordy in expression but ineffectual in action, which prompted keen-sighted bankers to join together in order to salvage an embarrassed enterprise in which they were the joint heirs to its misfortune. It was the purely selfish motive of getting the biggest individual share—the basic and abiding principle of self-interest. But in carrying out this motive they were forced not only to help each other but also to alleviate, more than any other factor or circumstance, the severity of the reaction.[14]

The most clearly obvious advantage of the creditors' committee receiverships and the one mentioned by all the bankers, is the efficiency and economy.[15] While the ordinary banker is not familiar with the routine administration of a manufacturing or mercantile business, he invariably possesses the saving grace of knowing his limitations—something which the court receiver, especially if he is a young lawyer in search of a subsidy, does not know. Legal experience teaches a man caution, respect for precedent and authority. The business man who can best handle a crisis needs initiative, courage, and independence of judgment. He must do things that have not been done before; and he must do them quickly and in a way to inspire the confidence of his associates and subordinates. And the cost of a creditors' committee receivership is low compared with that of a court receiver. It has become the current view among bankers that their service on a creditors' committee represents a voluntary contribution to the needs of the general situation. As they are themselves creditors who will be benefited by an economical management of an embarrassed business, they are working for themselves while they are working for others. It is therefore common for the members of the committee, notwithstanding the value of their time, to make no charge for their services. They will scrutinize very carefully expense accounts and reduce to a minimum attorneys' fees and the charges of experts. And they will turn the business over to its proprietors as soon as possible and not, as court receivers and their attorneys are prone to do, prolong the distress for selfish motives.[16]

Creditors' committees create less unfavorable publicity than court receiver-

[14] A banker from Detroit, where the business community certainly had its share of troubles, expressed the idea in a manner in which I am in entire agreement. "The spirit of cooperation which these creditors' executive agreements engendered in this country will be worth more to business generally in the days to come than we can in our minds compute. Two years ago it did not seem possible that business of any character could carry the burdens which were being put upon it. But the years have passed, and every business man, merchant, manufacturer or banker, who has been through the period, has a better understanding of his country, its resources, and what it can do in an emergency greater than has ever occurred to him could be met."

[15] This advantage was stressed by all the bankers who replied to the questionnaire. Even the single reply which stated that the creditors' committee was not an improvement over the court receivership admitted that "the administration of the estate by creditors' committees has sometimes been more economically handled."

[16] A public utility through mismanagement became distressed. It consisted of two parts, of approximately equal size, but situated in two adjoining states. One part was taken over by a creditors' committee, the other part by a court appointed receiver—a country lawyer of limited practise and unfamiliar with the public utility business. The latter retained his position for approximately a year after he was told that the debts could be paid and six months after a representative of the utility petitioned the court to be allowed to pay the debts and have the receiver discharged.

This point was tersely expressed by a banker writing from Cleveland. The creditors' committee administration "can be terminated at any time and usually is terminated as soon as the company's affairs are again in sound condition as the men who are voluntarily serving are most anxious to avoid the work as soon as the management of the company is again in shape to resume entire control. This situation is usually reversed under a receivership where the receiver and the receiver's attorney are most anxious to continue their services."

ships. While it is true that very few business embarrassments can be kept secret in the strict sense of the word, when commercial agencies and the credit departments of banks make it their business to concern themselves about other people's affairs, it is nevertheless true that there is a real and significant difference between the publicity of business misfortunes that is confined to credit agencies and banks and the publicity that of necessity attends all court proceedings. The former kind of publicity is restricted to that relatively small group of the whole business community which is concerned with the credit standing of a business; the latter kind of publicity includes not only the credit fraternity, but extends also to that wider background of community knowledge significantly called "the public." The distinction is of far greater importance to some kinds of business than to others, but it is present to a greater or less extent in every case. And it must be carefully weighed in considering the treatment of an embarrassed business.

The disadvantages attendant upon the wide publicity of a business's embarrassment are subtle and far reaching. There is the perfectly obvious fact that widely heralded misfortunes leave a deep impression upon bankers and credit men. The minds of the banker and credit man are like sensitive but soft wax; contemporary affairs make a quick impression, but only those impressions live beyond a narrow present which are reenforced and set. Consequently a business crisis which has been handled smoothly and quietly by a creditors' committee, although all the details are known and recorded in credit files, can come into the general market for credit quicker and with greater assurance than if the affairs had been handled by a court receiver.[17]

[17] One banker (answer to questionnaire, question 5,) stated this principle clearly and precisely as follows: "The injury to the companies' credit (by the Creditors' Committee), is nominal as compared with the very great injury in the case of a receivership."

But there are other considerations. The morale among employees can be properly maintained only when there is one master. If a court appoints the old proprietor or chief executive as receiver, there may not be a division of loyalty, but when an outside party, especially a lawyer, unfamiliar with the business, assumes executive control there will arise inevitable friction with the higher salaried officers, and after awhile loss of morale throughout the entire organization. A lawyer-receiver, suddenly raised to executive control over a business of which he knows nothing, likes to show his authority. He knows that this authority, arising out of his judicial appointment, has an absoluteness about it not claimed by the ordinary business executive. Employees at all levels will ask themselves if all the publicity and notoriety attending the public disclosure of their employers' troubles does not affect them. The men in the forecastle as well as the mates do not like to be ashamed of their craft. They do not like to see their business held up to public criticism and even ridicule. Often the employees themselves will join the public and give voice to "things we see" that are not generally known, or apologize sheepishly and say they are looking elsewhere for jobs. This applies particularly to the subordinate executives—assistants in the office, superintendents in the factory, or salesmen on the road. On the other hand, when the only change which the employees see as a result of rumored difficulties is the presence of a new "comptroller" or even treasurer, while the rest of the personnel remains the same, there is little comment. The employees of a business judge by outward signs, and as the creditors' committees make every effort not to disturb the established routine there is no general uncertainty and no loss of morale.

Other advantages of the creditors' committees might be stressed but the limits of a periodical article demand brevity. Yet there is one matter which requires at least passing attention. It is the great

practical service which creditors' committees rendered in the extremity of this last emergency. Even were court receiverships as efficient as creditors' committees in dealing with business embarrassments the suddenness and the extent of the last crisis would, had the courts endeavored to deal with all the emergencies, have resulted in little short of paralysis. The advantages, such as they are, that arise from court receiverships come only after due care and deliberation. Hasty and ill-considered action, either by the court or its receiver—backed by the power of the court—would inevitably lead to unfortunate consequences, and should our courts have attempted by the usual equity proceedings to have appointed receivers for and administered all the businesses that found themselves in difficulties, their work would have suffered paralysis. During 1920 and 1921 the work would have been very inefficiently done and great individual and social waste would have resulted. Of this I believe there is unanimity of assent among all who were at all conversant with the difficulties of the whole situation. And to supplant the ordinary machinery of the court, something would have been done. Probably, in the extremity, social opinion and court practise would have instigated some measure of cooperative props in which the banks would have had to take a prominent part. But the creditors' committees arose in the emergency and solved the problem by voluntary adjustment rather than judicial pressure. That the business community was able to work out its own salvation through measures arising from within, rather than imposed on it by the judiciary is an indication of the fundamental soundness and resilience of the American business.

The success of the creditors' committee in dealing with the crisis of 1920-1921 may have exaggerated its importance with respect to future times. The crisis through which we have just passed was characterized above all else, by the abrupt and precipitous decline in the prices of basic commodities. In such an emergency the creditors' committee would be expected to show itself to the best advantage. In a less serious crisis, where the carrying of large inventories of commodities was not the chief urgent necessity, the results might not be so satisfactory. At all events a new and unmistakably efficient method of dealing with embarrassed business has been evolved, the future significance of which cannot now be clearly predicted.

BANK RESERVES UNDER THE FEDERAL RESERVE SYSTEM

By FREDERIC H. CURTISS

BANK reserves are that portion of bank deposits which ordinary business prudence calls for banks to keep on hand, uninvested, to meet the current demands of their depositors. In most countries banking is conducted by a few large banks having numerous branches, and the decision as to what proportion of a bank's deposits should be carried uninvested as a reserve is left to the business judgment of the officials of each bank. The situation is different in the United States. Here banking has developed along lines peculiar to this country, the so-called "independent" banking system—a system which has encouraged the steady increase in the number of small banks, which number today no less than 30,000 odd, whereas in England there are but 20 banks with some 7,000 branches. It has been found desirable here therefore to enact laws, both state and national, whereby incorporated banks are obliged to carry a certain minimum reserve against deposit liabilities. In this discussion the subject of reserves against circulating note liability will not be touched upon, although in the United States legal reserves against bank deposits and note circulation have gone hand in hand and first developed from the unfortunate experience in the pre-Civil War period encountered by holders of the circulating notes of state banks.

I. History of Reserves Against Bank Deposits

Although previous to the passage of the National Currency Act in 1863, some of the states had begun to recognize the desirability of having some sort of cash reserve against deposit liability, the practise of requiring by law a minimum reserve against deposit liabilities was but slightly recognized and dates from 1842, when the State of Louisiana passed a bank act which required the banks of that state to keep 33⅓% reserve in specie against combined note and deposit liability.

With the passage of the National Currency Act in 1863, bringing together as it did what had been recognized as the best banking legislation in each of the several states, all banks organized under that act were required to have on hand at all times, in lawful money of the United States 25% of their outstanding bank notes and deposits. Balances due from national banks in "Boston, Providence, New York, Philadelphia, Baltimore, Cincinnati, Chicago, St. Louis or New Orleans in good circulating notes and deposits" might be deemed to be part of the lawful money which national banks located elsewhere than in those cities were obliged to have on hand. National banks in the above-named cities were obliged to carry the same percentage of reserve, but all in their own vaults. In 1864 this section of the act was modified so that the national banks outside of the reserve cities had to carry but 15% reserve, three-fifths of which might consist of balances due from national banks in reserve cities; Louisville, Detroit, Milwaukee, Cleveland, Pittsburgh, Baltimore, Albany, Leavenworth, San Francisco and Washington City being added to the list. The cities of Richmond and Charleston were to be designated as reserve cities when approved by the Comptroller of the Currency. At the same time New York City was designated as a central reserve city, and national banks in reserve cities were allowed to carry half of their 25% lawful reserve in balances in certain approved national banks in New York City. In 1870 the National Cur-

rency Act was amended so that every national bank was obliged to carry on hand not less than 25% of its outstanding bank notes in gold or silver coin of the United States.

In order to facilitate Clearing House Exchanges, Treasury Certificates for United States notes in denominations of not less than $5,000 were later allowed to be counted as legal reserves by national banks, these United States notes or "greenbacks" as they were called not having been lawful money for reserves up to 1872. In 1874 the Currency Act was revised, being then first designated as the National Bank Act. The reserve requirements were modified under this act, no doubt owing to the increased use of deposit currency—checks, so that the revised reserve requirements applied to the amount of the banks' deposit liability only. The new act, however, did require a 5% fund for the redemption of notes to be carried in lawful money in the Treasury of the United States, but this 5% fund could be counted as a part of the bank's lawful reserve against deposits.

In later years the National Bank Act was amended so that cities with a population of over 200,000 might be designated as central reserve cities and cities of 25,000 population and over as reserve cities whenever three-fourths of the banks in those cities made such request of the Comptroller of the Currency. Under these amendments there ultimately were designated some 63 cities as reserve cities and 3 central reserve cities, Chicago and St. Louis being designated central reserve cities in addition to New York. However, in 1922, St. Louis became again a reserve city as a result of a petition by the St. Louis national banks to the Federal Reserve Board.

II. Bank Reserves and Collection of Depositors' Checks

There is no feature of banking which has had so much influence on the manner in which banking has developed in the United States as the steady increase in the use of the individual depositor's check. It has largely taken the place of the bank check drawn on exchange centers and has continually presented problems in matters pertaining to exchange and reserve requirements which have been among the most difficult to solve. As these depositors' checks began to circulate away from home, they accumulated more and more in exchange centers, as had been the case with national bank notes, which they showed a tendency to replace. The collection of these depositors' checks, especially when drawn on banks outside the exchange centers, led to the development of remittance and collection accounts, of reciprocal balances between centers, and to the indirect routing of checks to centers where banks specialized in the collection of the so-called "country checks."

One of the most important phases in connection with the handling of out-of-town checks in the exchange centers has been the question where the exchange and carrying charge should rest. At an earlier time it was the custom for a merchant, who had a bill to pay at some distant point in the United States, to buy from his bank a bill of exchange—the bank's own check—drawn on a place so near that distant point as to make the bank's check a satisfactory form of payment just as today an American firm, with a debt to discharge in London, would purchase a bill of exchange payable in sterling and drawn on a London correspondent of an American banker. Gradually, however, there developed a different practise in domestic transactions and it became customary for the merchant to send his own check drawn on his local bank direct to his creditor—with two results, first the merchant escaped the charge formerly made by his bank for the bill of exchange sold to him; and, second, the check naturally gravitated to the nearest exchange center where it and similar checks were assembled and forwarded for collection to the drawee

banks, which in many cases recouped themselves for the lost exchange revenue by imposing a charge for remitting in payment for the check. When such a charge was imposed, it was thus shifted from the drawer to the payee of the check or to one of the collecting banks, in which the check was deposited for collection. Competition between banks has resulted in this charge being placed to a large extent upon the banks and not upon the depositor of the check, although for the past 20 odd years Clearing House Associations in the large centers have made rules and regulations whereby their member banks were obliged to collect such charges from those depositing the checks. To avoid these charges there has been in the past the most circuitous routing of checks, which were forwarded for collection not in any natural direct way, but so transmitted as to take advantage of any reciprocal arrangements between banks that might be devised to secure payment of such items at par.

Another most important feature in the circulation of the depositors' checks was the effect that it had on balances due from banks acting as reserve agents. In the period before the reserve requirements of the Federal Reserve Act became operative, banks would send checks to their Reserve agents for collection and would count them as reserve the moment they were put into the mail. The result of this was that a very large portion of the balances due from Reserve agents consisted of checks in the process of collection and these uncollected checks frequently were considered as reserve for banks in several places, as for instance, where a country bank sent checks to its Reserve agent, which in turn would send these same checks to a central reserve agency for collection. There has also grown up, sanctioned through rulings of the Comptroller of the Currency, the practise of deducting net amounts due from banks from the net amounts due to banks.

For the most part the percentages of legal reserves have been based upon the velocity of turnover of a deposit, and therefore the laws have been such that banks in the central reserve cities have been obliged to carry larger reserves than those in reserve cities, and banks in outside sections have carried the smallest. One of the points on which there has been much controversy is whether a secured deposit should be subject to a reserve, and as far back as 1908 Congress passed a bill exempting from the reserve requirements deposits of the United States Government, which were always secured, the security however varying in character from time to time, while certain of the State laws are such that no reserves are required in the case of savings deposits that are segregated and secured. If the velocity of turnover of deposits—the possibility of demand—is the test, is this logical? How readily a security or a balance due from a bank may be converted is another angle from which this reserve problem has been approached, and it brings up rather interesting questions as to the propriety of allowing as a deduction balances due from banks at points that are not recognized as veritable exchange centers, and during the past few years, with the varying conditions of the market for foreign exchange, the desirability of allowing as a deduction balances in foreign countries. While speaking of foreign balances, it is proper to mention the deposits carried in foreign countries by branches of banks with head offices in the United States. These branches are obliged to maintain reserves in accordance with the general banking policy or needs of the country in which they are located, and the parent bank has not been required to carry any lawful reserve against such deposit liability. In some states a certain percentage of the required reserve may be carried in the form of state and United States Government bonds.

This, in a very sketchy way, is a statement of the development of banking practise and of statutory regulation with reference to reserves up to the time of the

passage of the Federal Reserve Act of December 23, 1913.

III. Reserves Under the Federal Reserve System

Under the Federal Reserve Act as originally enacted, a member bank in a central reserve city was required to carry a reserve equal to 18% of the aggregate amount of its demand deposits and 5% of its time deposits, as follows:

In its vaults 6/18 thereof;
In the Federal Reserve Bank 7/18;
The balance to be held in its own vaults or in the Federal Reserve Bank at its option.

A member bank in a reserve city was obliged to carry reserves equal to 15% of the aggregate amount of its demand deposits and 5% of its time deposits, as follows:

In its vaults for a period of 36 months after the date the Federal Reserve Banks opened (November 16, 1914) 6/15 thereof, and permanently thereafter 5/15.

In the Federal Reserve Bank of its district for a period of 12 months after November 16, 1914, at least 3/15, and for each succeeding 6 months an additional 1/15, until 6/15 had been so deposited, which was the amount to be permanently so carried.

For a period of 36 months after November 16, 1914, the balance of the reserves might be held in its own vaults, or in the Federal Reserve Bank, or in national banks in reserve or central reserve cities.

After said 36 months' period all of the reserves, except those required to be held permanently in the vaults of the member bank and in the Federal Reserve Bank, were to be held in its vaults or in the Federal Reserve Bank, or in both, at the option of the member bank.

A member bank not in a reserve or central reserve city was required to maintain reserves equal to 12% of the aggregate amount of its demand deposits and 5% of its time deposits, as follows:

In its vaults for a period of 36 months after November 16, 1914, 5/12 thereof and 4/12 permanently thereafter.

In the Federal Reserve Bank of its district, for a period of 12 months after November 16, 1914, 2/12, and for each succeeding 6 months an additional 1/12, until 5/12 had been so deposited, which was the amount to be permanently so carried.

For a period of 36 months after November 16, 1914, the balance of the reserves might be held in its own vaults, or in the Federal Reserve Bank, or in national banks in reserve or central reserve cities.

After said 36 months' period the reserves, other than those required to be held in the vaults of the member bank and in the Federal Reserve Bank, were to be held in the vaults of the member bank or in the Federal Reserve Bank, or in both, at the option of the member bank.

These reserve requirements were fairly satisfactory except in the case of banks outside of the reserve and central reserve cities, the so-called "country banks," and the latter had much to do with the antagonism against the Federal Reserve System shown by those banks in the early days. These country banks were to a large extent obliged to carry the same balances with their city correspondents that had been carried prior to the passage of the Act, in addition to the reserve balance required by the Act to be carried in the Federal Reserve Bank, a balance which was to a large extent inactive, on which no interest was received, and which therefore cut down the earning power of those banks. This was especially the situation in the period before the Federal Reserve Banks had developed their collection system.

After a careful investigation had been made of the different aspects of the reserve problem, an amendment to the law was suggested by the Federal Reserve Board and enacted by Congress, becoming law on June 21, 1917. Under this amendment, the reserve requirements are that member banks in central reserve cities must carry 13% of their net demand deposits and 3% of their time deposits in the Federal Reserve Banks. Banks in reserve cities must carry 10% of their net demand deposits and 3% of their time deposits in balances due from the Federal Reserve Banks, while in the case of country banks

7% of their net demand deposits and 3% of their time deposits must be in balances due from Federal Reserve Banks. These are now the only reserves required of member banks.

The Federal Reserve Banks had by this time developed a general collection system and were prepared to handle at par for their member banks checks on banks in all sections of the country with the exception of a small portion of the Middle West and South. These checks are handled on what is known as a deferred credit basis —that is, a check is credited to a bank's account only after payment has been received by its local Reserve Bank or by some other Federal Bank, and the required reserve is therefore represented by an actual collected balance. It was the view when this amendment was proposed that it would be unnecessary to indicate by law the amount of cash reserve in vault, that every bank would carry additional cash on hand to meet the ordinary counter demands of its customers, also that this provision would draw any gold held in the vaults of the member banks to the Federal Reserve Banks, and that the assembling of all the legal reserves in the Federal Reserve Bank would give increased power to the Federal Reserve Bank in handling the general credit situation.

IV. Operation of Reserve Requirements

So far as the cash in vaults is concerned, the country banks are carrying a sufficient volume of cash to meet their counter demands, but this cash which formerly had been carried in lawful money (gold and silver certificates, and so forth) is now carried largely in Federal Reserve notes and national bank notes, thereby decreasing somewhat the elasticity of those notes; while in the case of banks in Federal Reserve cities and branch Federal Reserve cities, owing to the accessibility to the Federal Reserve Banks, a very small amount of vault cash is carried, the member banks depositing their till money each night in the Federal Reserve Bank and drawing it out again the next morning.

It is the opinion of some observers that the maintenance of the only lawful reserve of a member bank in the Federal Reserve Bank exclusively makes that reserve too sensitive and also that it would be desirable to have some cash reserve in lawful money carried in the member bank's own vaults, thereby forming a secondary reserve which might be utilized to strengthen the Federal Reserve Banks as was done by Congressional amendment in 1917.

In arriving at net balances on which reserves are calculated, the same deductions are allowed today that there were in the past. The deduction of balances due from banks from the balances due to banks being permitted by the Federal Reserve Act, the sanction of that practise is no longer simply a ruling of the Comptroller's office. The deduction of the deferred items—checks in the process of collection through the Federal Reserve Bank—has been allowed only where banks had deposits from banks; and since few of the country banks carry deposits of other banks, there has been considerable pressure from those banks to be allowed to make these deferred collections a deduction from their gross deposits and also to be allowed to deduct their cash in vault in order to offset the advantages obtained by member banks in Federal Reserve and branch Federal Reserve cities. Under the Federal Reserve Act postal savings—deposits secured by certain authorized investments—are subject to the same reserve requirements as time deposits, but Government deposits though similarly secured are subject to no reserve. Here, again, the question of the velocity of circulation of these deposits should be considered. Should not both of these be considered demand deposits and subject to the higher reserves?

The question of the deductibility of balances due from banks in foreign countries has been frequently under discussion, and the Federal Reserve Board has interpreted

the law so that these balances are not now deductible; and since balances due from some of the countries are still unavailable, while in other countries their availability is a matter of degree, the desirability of permitting their deduction would seem to be subject to criticism. There is, however, before Congress at the present time a bill which would permit such deduction and place in the hands of the Federal Reserve Board the responsibility of designating the conditions under which this might be done.

V. Conclusion

For the most part those who have given careful study to the problems connected with the reserve requirements of member banks in the Federal Reserve System believe that any changes which are made in the present reserve requirements should only be such as to bring about a more logical, simple and practical method of procedure in calculating these reserves. There appears to be a consensus of opinion that the reserve requirements of the member banks in the central reserve and reserve cities should certainly not be reduced since the banks in those cities apparently have benefited most by the recent changes in the law. Whatever changes are made would affect the various banks differently, depending upon the character of each bank's business. Some banks under the present law are apparently unduly penalized by the existing reserve requirements, but others have been able to reduce these reserve requirements to a point hardly consistent with good banking practise and the size of their banking operations.

Recent court decisions have tended to establish the right of a depositor to draw against checks credited to his account, even though uncollected, thus raising a question of the bank's liability for uncollected funds, and therefore it would appear that if a bank does create a deposit liability through such a credit, reserves should be carried on the aggregate deposit liability and there should be no deductions as at present. This practise of giving immediate credit to a depositor for all checks deposited however has become so universal and the transactions in uncollected checks so large and so varying in volume that a bank might be unduly penalized unless it were able to develop a system of accounting to cover deferred checks—deferring until paid each check received on deposit—although the physical labor in such a plan would, to the average practical banker, look insurmountable. The alternative might be to establish a classification for deduction, recognizing certain classes of items, such as uncollected checks, perhaps limiting that group or class to checks on local points in which a bank is situated or only to checks in process of collection in the Federal Reserve Bank making these deductible from all deposits and not simply from balances due to banks.

Whatever changes are made should be made gradually and after the most careful study of how such changes will affect each bank or group of banks. It is evidently desirable to have some logical theory of reserves formulated, which would be of value in considering every new amendment of the Federal Reserve Act and serve as a guide for every ruling of the Federal Reserve Board or Comptroller of the Currency. Unless there is some radical change in the character of bank development in the United States in the future, unless, to mention only one example, branch banking as it is known in Canada and England supersedes the present independent banking system, statutory reserve requirements will probably always be a feature of American banking. It is hoped, however, that some consistent and scientific plan will be developed whereby the reserve specified will be sufficiently large to protect depositors, but not so large as to hamper the successful operation of our banks, a plan which will be equitable in its operation to both the large city bank with its heavy responsibilities and the small country bank operating in a limited territory.

THE RAILROAD CONSOLIDATION PLAN

I. NEW ENGLAND

By WILLIAM J. CUNNINGHAM

DURING the two and one-half years since the passage of the Transportation Act, with its new policies of federal regulation of railroads, relatively little has been done to make effective the provision for the consolidation of railroads into a small number of large systems of fairly equal financial strength. Inasmuch as such consolidations are to have a vital bearing upon the new rule of rate-making, the subject has not attracted as much attention throughout the country as its importance justifies. Speaking generally the possibility of changes in the line-up and affiliations of individual railroads or groups of railroads, and the effect of such changes on public service, have given the public but little concern, and, indeed, the railroads themselves, except in a few cases, are not regarding the subject as of immediate importance. The magnitude of the task, the uncertainty as to the powers of the Interstate Commerce Commission in making effective its final recommendations, and the doubt as to the constitutionality of a proposed amendment which would authorize the Commission to require compulsory consolidation, all tend to push the problem into the future. The possibility of comprehensive mergers is regarded by the typical railroad manager as remote. Consequently the more pressing and immediate problems of depleted net income, strikes and maintenance of the properties overshadow the distant and less tangible problems of organization, operation, service and earning power under any proposed line-up of the future.

While the foregoing summary of the present situation with respect to consolidations is true of the country as a whole, there are exceptions, notably in New England. There the railroads, the organizations of shippers, other commercial bodies, the state governments and the general public are taking a keen interest in railroad consolidation as it may affect New England, and the subject is regarded as of vital and immediate importance to the commercial and industrial welfare of the six states east of the Hudson River. The governors of the several states have appointed committees of prominent citizens to investigate and make recommendations as to the stand to be taken by the states in the forthcoming hearings before the Interstate Commerce Commission. Similar action has been taken by chambers of commerce and other commercial bodies. The governors' committees have been holding public hearings, and the press is devoting a large amount of space to reports of such meetings, to editorial comment, and to letters from readers.

The exceptional interest taken by New England is explained in part by the fact that the Interstate Commerce Commission, in its tentative proposals published a year ago, suggested two alternative plans for New England, but did not indicate its preference. One plan contemplates an all-New England system to be formed by a union of all of the railroads in that section except three which are now controlled by outside companies. The alternative plan is to join the New England roads individually to the large system already existing or to be created in Trunk Line territory, i. e., the lines running from New York, Philadelphia and Baltimore to Chicago, St. Louis and other central west

cities. Each of the two plans has its advocates, and discussion is general and animated.

The principal purpose of this article is to analyze the two plans from the public viewpoint, and to set forth their points of strength and weakness. In order to provide an adequate setting for the local problem of New England, the discussion will include a consideration of the general relation between consolidation and the new rate-making rule of the Transportation Act.

The Rate-Making Section of the Transportation Act

The Transportation Act of 1920 affirmatively recognizes the principle that the railroads are entitled to a fair rate of return on the value of their properties held for and used in the service of transportation. The principle had before then been recognized in court decisions, but it had not been written into the regulating laws. The Interstate Commerce Commission, in exercising its powers of regulation, had up to 1920 been charged only with responsibility for seeing to it that rates were reasonable and nondiscriminatory. Although it was vested with wide powers over financial organization, transportation service, accounting and other features of management, it was not charged with responsibility for protecting the earning power and the credit of the railroad companies. The Commission's functions were mainly corrective and punitive. The new law now couples responsibility for results with authority to regulate, and these results now include the ability of the railroads collectively to earn a fair rate of return, as well as protection of the public against unreasonable rates, discrimination, inferior or unsafe service, and financial manipulation. The rate-making section of the Transportation Act reads as follows: (Section 15a, paragraphs 2 and 3, Interstate Commerce Act, as amended by the Transportation Act.)

"In the exercise of its power to prescribe just and reasonable rates the Commission shall initiate, modify, establish or adjust such rates so that carriers as a whole (or as a whole in each of such rate groups or territories as the Commission may from time to time designate) will, under honest, efficient and economical management and reasonable expenditures for maintenance of way, structures and equipment, earn an aggregate annual net railway operating income equal, as nearly as may be, to a fair return upon the aggregate value of the railway property of such carriers held for and used in the service of transportation: *Provided,* That the Commission shall have reasonable latitude to modify or adjust any particular rate which it may find to be unjust or unreasonable, and to prescribe different rates for different sections of the country.

"The Commission shall from time to time determine and make public what percentage of such aggregate property value constitutes a fair return thereon, and such percentage shall be uniform for all rate groups or territories which may be designated by the Commission. In making such determination it shall give due consideration, among other things, to the transportation needs of the country, and the necessity (under honest, efficient and economical management of existing transportation facilities) of enlarging such facilities in order to provide the people of the United States with adequate transportation: *Provided,* That during the two years beginning March 1, 1920, the Commission shall take as such fair rate of return a sum equal to 5½ per centum of such aggregate value, but may, in its discretion, add thereto a sum not exceeding one-half of one per centum of such aggregate value to make provision in whole or in part for improvements, betterments or equipment, which according to the accounting system prescribed by the Commission, are chargeable to capital account."

In brief the Commission is now directed to establish the scales of rates and charges so that the railroads, as a whole or by territorial groups, under honest and efficient management, may earn a fair rate of return on the value of their properties as determined by the Commission. That fair rate of return, for the first two years, was defined as a maximum of 6% and authority was conferred upon the Commission to determine what should be the rate after March 1, 1922. From that date the Commission has set the rate at 5¾%.

There is widespread misconception concerning that section of the Act. Many

persons have the impression that the new law provides for a government *guarantee* to the *individual* railroads of a stated rate of return. As may be noted from the foregoing quotation from the Act there is no such guarantee. The Commission is directed to exercise its judgment in establishing rates so that *as nearly as may be* they will yield a fair rate of return on the value of railway investment. If the Commission errs in its judgment as to what the rates should be, and the rate of return is less than 5¾%, or if a business depression, strikes or other fortuitous circumstances cause losses in railroad revenues and income, the railroads are without remedy. They have no method of recouping themselves for the shortage under the statutory rate of return.

It will be noted further that the Commission is not directed to take into account the needs of individual railroads. The statutory rate of return applies only to the railroads as a whole in the four territorial groups established by the Commission—Eastern, Southern, Western and Mountain-Pacific. For the purposes of rate-making the railroads of each territorial section are regarded as one system. Inasmuch as rates must be uniform for all competitive traffic it is impracticable to establish competitive rate scales to meet the income requirements of individual roads in competitive territory. Consequently a scale of rates which will yield 5¾% for the carriers in the aggregate will give more than that rate to the prosperous roads and less than that rate to those roads which are handicapped by light traffic, high operating costs and property investment relatively large from the viewpoint of traffic density. If the scale is established to hold the strong roads to 5¾%, the weak roads cannot live. If it is set to yield as much as 5¾% to the weak, the return to the strong will be excessive.

To meet this dilemma the Transportation Act provides for two expedients. One of them is more or less temporary; the other is to be permanent. The first is known as the recapture clause under which the Government, through the Interstate Commerce Commission, is to take away from the individual railroads one-half of all net railway operating income in excess of the prescribed fair rate of return on value. This feature of the law applies to the railroads individually. By this expedient the Commission, in establishing the rate scale, can give greater consideration to the average road and the weak lines, since with the recapture clause in effect it is not necessary to pay as much attention to the possibility of excessive returns to the strong roads. As has already been stated this expedient is somewhat temporary. It is designed to care for one troublesome feature of rate-making until a more permanent solution of the problem of the weak road may be applied. That solution is railroad consolidation. The Act contemplates the elimination of the weak lines and the dilution of the strong roads by a process of merging the weak with the strong so that ultimately each territorial group will consist of a few large consolidated systems of fairly equal traffic capacity, earning power and financial strength. The section relating to consolidations (Section 5, paragraphs 4 and 5 of the Interstate Commerce Act as amended by the Transportation Act) is quoted in full:

"The Commission shall as soon as practicable prepare and adopt a plan for the consolidation of the railway properties of the continental United States into a limited number of systems. In the division of such railways into such systems under such plan, competition shall be preserved as fully as possible, and wherever practicable the existing routes and channels of trade and commerce shall be maintained. Subject to the foregoing requirements, the several systems shall be so arranged that the cost of transportation as between competitive systems and as related to the values of the properties through which the service is rendered shall be the same, so far as practicable, so that these systems can employ uniform rates in the movement of competitive traffic and under efficient management earn substantially the same rate of return upon the value of their respective railway properties.

"When the Commission has agreed upon a tentative plan it shall give the same due publicity and upon reasonable notice, including notice to the Governor of each state, shall hear all persons who may file or present objections thereto. The Commission is authorized to prescribe a procedure for such hearings and to fix a time for bringing them to a close. After the hearings are at an end, the Commission shall adopt a plan for such consolidations and publish the same; but it may at any time thereafter upon its own motion or upon application, reopen the subject for such changes or modifications as in its judgment will promote the public interest."

It will be noted that the Commission is without power to enforce its recommendations as to comprehensive consolidations, although another section of the Act provides that the Commission's approval must be obtained before voluntary consolidation on either small or large scale can be made effective. The Cummins bill, when it passed the Senate, provided that the Interstate Commerce Commission should have power to compel such consolidation, but the Esch bill, as it came from the House, contained no reference to the subject of consolidations. In joint conference the committees from the Senate and the House agreed upon the compromise measure now embodied in the 1920 law. The House agreed to the principle of consolidations but insisted that they should be voluntary. The Senate yielded by eliminating the compulsory feature.

As it now stands the Commission must rely upon the force of public opinion to enforce such recommendations as the Commission may finally make. As the principle of consolidation is vital to the permanent success of the new policy of rate regulation it is probable that public pressure will be brought to bear upon those who for selfish reasons may refuse to adopt a plan which appears to be in public interest. In any event it is likely that one or more companies will insist upon appealing to the courts if the Commission's plan appears to be prejudicial to their individual interests, and the situation will not be clarified until a test case has been decided. It is not at all unlikely that eventually the law will be amended so as to remedy whatever defects may then be apparent.

The Commission's Tentative Plan

Under date of August 3, 1921, the Interstate Commerce Commission published a report (63 I. C. C. 455) which embodies its tentative recommendations in the matter of railroad consolidations. This plan contemplates the creation of 19 large systems, to be built around certain of the important existing systems. Disregarding the small railroads, the proposed line-up may be summarized as follows:

SYSTEM No. 1. New York Central, with its leased and affiliated lines and several small railroads. As one alternative for New England, the New York Central system may include the Boston & Maine, the Maine Central and the Bangor & Aroostook.

SYSTEM No. 2. Pennsylvania, with its leased and affiliated lines and a few smaller properties.

SYSTEM No. 3. Baltimore & Ohio and Philadelphia & Reading, with four small lines. As one alternative for New England the B. & O. system may include the New Haven and Central New England roads.

SYSTEM No. 4. Erie, with the Delaware & Hudson, Lackawanna, Bessemer & Lake Erie, Wabash lines east of the Missouri River, and five small roads.

SYSTEM No. 5. Nickel Plate-Lehigh Valley, with 6 small properties.

SYSTEM No. 6. Pere Marquette, with four other railroads serving the Michigan peninsula.

SYSTEM No. 7. New England, consisting of the New England roads, Lehigh & Hudson River and Lehigh & New England. This is an alternative to the first proposal that the northern New England roads should be joined to the New York Central and those in southern New England made a part of the B. & O. system. The Lehigh roads are included so as to give New England an entrance into the Pennsylvania coal fields.

SYSTEM No. 8. Chesapeake & Ohio, with the Hocking Valley and the Virginian.

SYSTEM No. 9. Norfolk & Western with the Toledo & Ohio Central.

SYSTEM No. 10. Southern, with its leased and affiliated lines and the New Orleans Great Northern and Alabama & Vicksburg.

SYSTEM No. 11. Atlantic Coast Line and Louisville & Nashville with their leased and affiliated lines and several small roads.

SYSTEM No. 12. Illinois Central and Seaboard Air Line, with their leased and affiliated lines and four others.

SYSTEM No. 13. Union Pacific and Chicago & Northwestern, with their leased and affiliated lines and the Wabash west of the Missouri River.

SYSTEM No. 14. Burlington and Northern Pacific, with the Chicago Great Western, Minneapolis & St. Paul, and Spokane, Portland & Seattle.

SYSTEM No. 15. Chicago, Milwaukee & St. Paul and Great Northern, with six smaller roads.

SYSTEM No. 16. Santa Fe, with the Colorado & Southern, Denver & Rio Grande, Western Pacific and three others.

SYSTEM No. 17. Southern Pacific and Rock Island, with their leased and affiliated roads and several small lines.

SYSTEM No. 18. St. Louis-San Francisco, Missouri, Kansas & Texas and St. Louis Southwestern, with three others.

SYSTEM No. 19. Missouri Pacific and Chicago & Eastern Illinois, with the Kansas City Southern and seven others.

In promulgating its tentative plan the Commission stated that it was put forward merely "to elicit a full record upon which the plan to be ultimately adopted can rest, and without prejudgment of any matters which may be presented upon that record." The tentative plan adheres closely to the recommendations of Professor William Z. Ripley of Harvard University, who was invited by the Commission to make a study and report to assist the Commission in the preparation of its plan. In certain particulars, however, as in the case of New England, the Commission has departed from Professor Ripley's suggestions.

After allowing more than four months for public consideration of its tentative plan, the Commission began its first hearings on the subject in January, 1922. These were held in the South, as the Commission decided to consider first the proposals which affected the Southern region. At the hearings it developed that the Commission expected the railroads and others who objected to the tentative plan to do more than criticize it. They were urged to present constructive alternative suggestions, and the hearings were suspended to enable the railroads affected to prepare and present a plan of their own. Nothing definite has as yet been accomplished. In the meantime the Commission has served notice that New England will receive the next consideration and that hearings are to be held in Boston in October.

The Alternative Plans for New England

As has already been indicated briefly, the Commission has proposed two alternative plans for New England. The first may be called the New England group plan; the second the Trunk Line plan. Under the first plan the New Haven, Boston & Maine, Central New England, Maine Central and Bangor & Aroostook would be merged into one system which would take over also the Lehigh & Hudson River and the Lehigh & New England, so as to have an entrance into the Pennsylvania coal fields. Under the second plan the roads in northern New England would become a part of the New York Central system and those in southern New England would be joined to the Baltimore & Ohio system.

A third alternative was also proposed but it has not been considered seriously and is seldom discussed. It is listed in the Commission's report as System 7a, New England-Great Lakes. It includes the New England roads, Delaware & Hudson, Lackawanna, Buffalo, Rochester & Pittsburgh and three other small properties. As this plan is merely an extension of the New England group plan, its advantages and disadvantages are essentially the same as those of the New England group plan contemplated by the Commission's System No. 7. In all of the alternative plans the Boston & Albany and the Rutland are considered as parts of the New York Central, with which they are now affiliated, and the Central Vermont and the Grand Trunk Lines in Maine are regarded as parts of the Grand Trunk system of Canada.

While the Commission withholds an expression of preference for any of the alternative plans for New England, Professor Ripley's report contains a definite recom-

mendation favoring the New England group plan. As a second choice he would join the New Haven and Central New England to the Baltimore & Ohio system and would merge the Boston & Maine (except its line from Worcester through Nashua to Portland) with the Delaware & Hudson and the Erie, and would extend the New York Central system into Maine by giving it the Worcester, Nashua & Portland division of the Boston & Maine, with the Maine Central and the Bangor & Aroostook roads. The New York Central already has its line to Worcester and Boston through the lease of the Boston & Albany. In formulating its tentative proposals the Commission ignores Professor Ripley's suggestion calling for a partial dismemberment of the Boston & Maine so that the New York Central might get into Maine, and his further suggestion that the Boston & Maine (except its W. N. & P. division) be linked with the Delaware & Hudson and the Erie.

In addition to the plans which are placed officially before the public in the Commission's and Professor Ripley's reports, the suggestions of John E. Oldham of Boston, a widely recognized expert in railroad finance, have attracted much attention in New England. His plan is somewhat complicated, but it may be described roughly as joint Trunk Line control of the individual New England carriers; that is to say, the New Haven would be controlled jointly by two Trunk Line systems and the Boston & Maine and the roads in Maine would be controlled by two other Trunk Line systems. Essentially it is a form of Trunk Line control.

Local versus Trunk Line Control of New England Railroads

The railroad network of New England is divided into two fairly distinct parts by the Boston & Albany which separates the two territories, northern and southern New England, in which the Boston & Maine and the Maine railroads on the one hand and the New Haven on the other hand have partial monopolies of transportation in the respective parts of New England. The states of Connecticut and Rhode Island and parts of Massachusetts are dependent upon the New Haven road and its boat lines. Other parts of Massachusetts, New Hampshire and parts of Vermont and Maine, are dependent upon the Boston & Maine. The Maine Central serves central and southern Maine, while the Bangor & Aroostook has a monopoly in the northeastern section of the state. In addition to the outside-controlled Boston & Albany, there is the Central Vermont and the Grand Trunk which run north and south from the Canadian border to the Atlantic seaboard, the former reaching New London, Conn., and the latter having good tidewater facilities at Portland, Me. The status of these three outside-controlled lines will probably not be changed by consolidation as they will undoubtedly continue to remain as parts of the systems with which they are now connected.

New England is peculiarly dependent upon transportation. Except in the northern and extreme eastern sections, where agriculture and lumbering predominate, New England is primarily a manufacturing community. The greater part of its raw materials, such as cotton and wool for the great plants of Fall River, New Bedford, Lowell, Lawrence and Manchester, or hides for the shoe factories of Brockton and Lynn, must be brought from the South or the West or imported by water. Fuel must be transported long distances. New England's principal markets for its finished products are far distant from the plants. Transportation rates and transportation service, therefore, have a vital influence upon the manufacturing and general prosperity of New England.

A part of the handicap of remoteness from raw materials and markets has been neutralized by commodity rates based on competitive influences rather than on distance, but New England has had to be constantly on guard against encroachment

upon its rate privileges, as distance and the cost of service tend to play greater parts than heretofore in the fixing of rates. New England, therefore, is sensitive to any proposed change which may affect rates or service and is suspicious of anything which may be favored by their connecting railroads west of the Hudson, since those roads serve states with which New England has the keenest commercial competition. It may be said, however, that the New England manufacturer is concerned not so much in the absolute rate which he pays on his freight bill as upon its relation to that which is paid by his competitor outside of New England. He fears any tendency which will give distance, as an element in rate-making, a greater weight than it has heretofore had in the establishment of commodity and other rates fixed in the past primarily by the influences of sectional competition.

This fear explains in a large measure why the manufacturer in New England is more concerned about the possible changes in railroad control than the manufacturer in New York, New Jersey, Pennsylvania and the Central states. The ability of the New Englander to continue in business depends in part upon the maintenance of relativity in rates. These rates, initiated by the New England roads, were concurred in by their western connections as a result of the bargaining power of New England in westbound traffic and other trading factors. It might be risky, then, to break this trading balance by mergers which would combine both parties to the trade and leave the control west of the Hudson.

The sentiment for an all-New England system is based primarily on considerations of sentiment and fear of what might happen if control of New England railroads were vested in railroad executives in New York, Philadelphia or Baltimore. Yet it overlooks the fact, to be developed later, that the New England carriers, under present rates and operating conditions, are not now self-sustaining, that their credit is impaired, that they are far behind in normal expenditures for additions and betterments of facilities and equipment, and that they are unable because of impaired credit to raise the necessary new capital on reasonable terms. Those who advocate consolidation with Trunk Lines see promise of financial rehabilitation, as the stronger Trunk Lines could give of their greater resources to improve facilities and service in New England, and they have faith that the Interstate Commerce Commission and the state commissions may be relied upon to prevent changes in executive control from adversely affecting either rates or service in New England.

In analyzing the two alternative plans from the viewpoint of New England three sets of factors should be considered, viz.:

(1) Service and rates
(2) Finance
(3) Management.

Under the first set of factors should be listed such items as competition in service, availability of gateways, and competition in rates. Under the second come such items as ability to meet fixed charges, pay dividends and maintain a surplus so that money may be borrowed for additions and betterments. Under the third is the responsiveness of management to local interests. Each plan must be tested further by reference to the law which requires that competition shall be preserved as fully as possible, that existing routes and channels of traffic shall be maintained as far as practicable, and that the cost of operation as related to property value shall (as between the proposed systems in any territorial group) be substantially the same, so that uniform rates on competitive traffic may be employed and shall yield substantially the same rate of return on property value.

From the viewpoint of New England the desiderata are these: the fullest measure of competition should prevail in through service; no restrictions should be placed upon the free movement through

any and all gateways; the existing differential rates via the northern gateways and Canada to the West should not be disturbed; nothing should be done to hamper the free development of water transportation service by coastwise lines; New England port development should be fostered; the management should be sincerely responsive to New England interests and should not be hampered by interference from outsiders whose interests may be opposed to New England development; and, finally, the plan to be adopted should be financially feasible so that not only day-to-day solvency may be maintained but also so that the credit of the New England transportation system may be so improved that it will be possible to attract new capital on reasonable terms for much needed improvements and enlargements in facilities and equipment.

The New England Group Plan

The major arguments of those who favor the New England group plan may be summarized briefly. They are these: As a distinct and separate part of the United States New England demands a transportation system peculiarly its own. It should not be hampered by outside control of its carriers. Absentee management in Trunk Line territory may work against local interests, such as the development of New England ports and its coastwise boat service. New England's commerce and industry demand the free and uninterrupted use of all traffic gateways so as to maintain the maximum of competition. Trunk Line control may restrict the use of certain gateways. The New England roads as a unit, controlling their attractive westbound high-grade freight traffic, should be in a better position to secure good competitive service and should also be in a strong bargaining position to obtain better divisions on the revenues from interline freight. A solid New England system would prevent any interference by the Trunk Lines with the existing favorable differential freight rates via the Canadian gateways. Absolute local autonomy in transportation should mean a responsiveness on the part of management toward New England's needs, and on the part of the public a higher sense of local interest and responsibility—financial as well as commercial.

These arguments have much weight and they would be controlling if they were not overbalanced by the factor of finance. The New England roads are not self-supporting under existing conditions. If they become self-supporting when normal business conditions return, they will hardly have sufficient net income over and above their charges to maintain a reserve and reestablish the credit so necessary to finance improvements vitally necessary. With the return of a volume of traffic as great as that handled in the fall of 1920, and the normal growth in ton-miles and passenger-miles which will come with the upward swing of the business cycle, the New England roads will need to expend large sums for improvements and enlargements. Without these improvements and enlargements the heavier traffic demands of the near future may not be met satisfactorily.

Neither the Boston & Maine nor the New Haven roads have been able to pay dividends since 1913. The Maine Central was forced to suspend its dividend in 1920. The low market quotations on the securities of these properties indicate the lack of public confidence in the early revival of earning power.

The welding together of the New England roads would not be a union which would bring added financial strength. It is true that the normal growth in traffic should bring greater operating revenues, but traffic in excess of economical capacity will carry heavier unit costs so that the final result in net income may be unfavorable. A better basis of divisions of the revenues on traffic interchanged with the Trunk Lines will add to revenues, but the amount will not be sufficient to meet the pressing needs. Under the principles

of the Transportation Act New England might be made a separate rate-making territory and the New England roads could appeal to the Interstate Commerce Commission to increase rates so as to bring the statutory rate of return upon their relatively high values. But even if the Commission should grant such authority, that solution of the financial problem would be strongly objected to by those who pay the freight, and it is doubtful whether New England's commerce and industry could assume a freight rate burden materially higher than that prevailing in contiguous competing industrial territories. Rates set high enough to yield 5¾% on the property value of the New England carriers might react against New England business so as to defeat the revenue purposes of the rate increases.

The New England shipper who advocates the New England group plan may not know that when the railroads prepared their case for presentation to the Commission in 1920, it was found that an increase of about 58% in freight rates, on the then volume of traffic, would be necessary to yield 6% on the property value of the New England carriers, while in the remainder of the Eastern territory an increase of but 38% would bring 6% to the eastern carriers outside of New England. This disparity is the reflex of changed conditions which have borne with greater force on the operating expenses of the New England roads. It was then seriously proposed that the New England roads should ask the Commission to recognize New England as a separate rate-making territory, but the carriers finally decided to join with the remainder of the eastern territory because of the representations of shippers that New England could not stand such an increase and because there was some ground for hoping that the lines west of the Hudson would give the New England roads a larger share of the freight revenue on interchanged traffic. The inclusion of New England with the roads in Trunk Line and Central Freight Association territories had the effect of increasing the average freight rate advance to 40% to the entire district; in other words, the roads west of the Hudson were granted an increase of 40% when they needed but a fraction more than 38%, while New England, which needed 58%, received but 40%. On the volume of traffic handled in 1919 it was estimated that the additional increase meant about $25,000,000 more revenue to the roads west of the Hudson, and that New England would be $25,000,000 short of the sum necessary to yield 6% on property value. The proposal was that the divisions should be revised so that in effect the $25,000,000 would be transferred from the west to the east of the Hudson.

Subsequent negotiations with the lines west of the Hudson developed serious differences in opinion as to the propriety of revising the scale of divisions for that purpose. In the meantime the serious depression in business had so diminished the net revenues of the Trunk and C. F. A. Lines that they could take the stand that inasmuch as the $25,000,000 had not materialized there was no excess to transfer to New England. The matter was then taken to the Interstate Commerce Commission. Its first decision was unfavorable to New England, but when the case was later reopened the Commission reversed itself and decided that the Trunk and Central Freight Association lines should, with exceptions on certain traffic, give New England 15% more in the division of joint freight revenue. This change in the apportionment of such revenue was estimated by the Commission as meaning an increase of about $7,000,000 per year to the New England roads, but under present conditions of business it is doubtful if that amount will be realized. The decision was handed down in April, 1922. Since then the Trunk Lines unsuccessfully appealed to the district court to have the Commission enjoined from enforcing its decision and at last ac-

counts they were preparing to appeal to the supreme court. This brief reference to the divisions case is justified as it has an important bearing upon the problems of consolidation.

The compelling force of the factor of finance was recognized by Professor Ripley when he wrote his report for the Commission and he referred to it in the discussion which preceded his conclusion that the New England group plan is to be preferred to affiliation with Trunk Lines. But he offered no practicable proposal as to how the New England roads as a separate group may be made self-supporting. He did suggest, however, that there should be a "mustering of all of the financial resources of the region, public as well as private, if necessary. . . . As a measure of self-protection the great American industries should unite in investment in these New England roads." He also suggested the expedient of state aid, and concluded: "No other course seems open except the adoption of vigorous measures for setting the New England house in order, recognizing past mistakes and pocketing the losses, and then proceeding to set up a new organization which shall have assurance from public reputation of straightforwardness and honesty that the invincible power of New England's associated capital and industry shall loyally support the enterprise."

It is not likely that New England industry will welcome the suggestion that its funds should be diverted into railroad securities of doubtful value. That part of Professor Ripley's suggestions may be regarded as having little actual promise. As to state aid: that would be but the beginning of Government ownership. If the Government is to assume functions of management as well as of regulatory control under existing laws, it were better to adopt out-and-out Government ownership at once and face the situation frankly. Three years ago, when the several plans for the solution of the railroad problem were before Congress, the public attitude toward every proposal which contemplated Government ownership or Government operation was one of overwhelming disapproval. It is unnecessary here to enter upon a discussion of the expediency of nationalization. Suffice it to say that such a policy does not appeal to those who are interested in the continued progress of New England's commerce and industry. It is an alternative to be entertained only when all others have met with unquestioned failure.

The Trunk Line Plan

Having considered the advantages and disadvantages of the New England group plan, attention will now be directed to its principal alternative—the Trunk Line plan. One of the Commission's proposals is that the New Haven and the Central New England shall be merged with the Baltimore & Ohio system and that the Boston & Maine, Maine Central and Bangor & Aroostook be made a part of the New York Central.

The principal argument for such an affiliation is that it will bring the financial strength so urgently needed by the New England carriers. The New England group plan will not bring additional financial strength. The large financial needs of the weak roads in New England can be met by the stronger Trunk Lines without seriously taxing their greater resources. The westbound tonnage originating in New England is valuable traffic for the Trunk Lines as their heavier movement is eastward and their westward trains are not loaded to capacity. If the Trunk Lines had a financial as well as a traffic interest in the New England roads there would be greater incentive for them to conserve and develop New England industries and to improve transportation service. The greater part of the troublesome questions of divisions would disappear as the entire revenue, now split between the New England roads and the Trunk Lines, would go to the consolidated systems.

The financial factor is of paramount importance. If it were the only question to be considered there could be no doubt about the advisability of adopting the Trunk Line plan. But against the plan there are several arguments which must be taken into account. There is a deep-seated fear upon the part of many New Englanders that outside control might lead to a diversion of traffic from New England ports to New York, Philadelphia and Baltimore. There is fear also that the union of the New Haven with one of the Trunk Lines, and of the Boston & Maine with another Trunk Line, would tend toward a monopoly in each of the two sections south and north of the Boston & Albany which would deprive New England of the stimulus of competition in rates and service—particularly in service. There is strong apprehension that the freedom of gateways would be restricted if each of the Trunk Lines insisted upon its long haul via its own gateways. As a single example: there is a belief on the part of many that shippers in Providence, R. I., who now have rates and through service to the West via Worcester or Springfield and the New York Central as well as via the Poughkeepsie Bridge and the Lackawanna and via Harlem River and the Pennsylvania and other roads, would be restricted to the Harlem River gateway if the New Haven road were controlled by the Pennsylvania. Furthermore, there is the possibility that New England might lose the advantage of the low differential rates via the northern gateways and the Canadian lines to Chicago and the West, as these differentials are not looked upon with favor by the Trunk Lines. And, finally, there is the dread of absentee management and the possible loss of local responsiveness to traffic needs, and there is distrust in the impartiality of executive control lodged in New York, Philadelphia or Baltimore, when matters of vital concern to New England's prosperity are up for action. This distrust is particularly keen in affairs which are of competitive interest, such as the now pending port differential case in which Boston is striving to have freight rates adjusted so that Boston will be on a parity with Baltimore and Philadelphia.

Those who oppose the Trunk Line plan because of the fear of what may happen to New England overlook the fact that the Interstate Commerce Commission, an impartial tribunal created for the purpose, may be relied upon to prevent the Trunk Lines, in the exercise of their control over New England railroads, from practising unfair discrimination against New England. The maintenance of competition in rates and service and the preservation of existing routes and channels of traffic are, under the terms of the Transportation Act, prerequisites of any scheme of consolidation. The Commission is obliged to insure that protection to any section which potentially may be adversely affected by railroad consolidation. New England may rely upon such protection. While the Commission has not yet indicated what will be its procedure when proposals for large-scale consolidations come before it for approval, it is safe to assume that the Trunk Lines would be asked, and undoubtedly would agree, to abide by the spirit of that section of the Act which aims toward the preservation of competition, existing routes, and service. The law specifically empowers the Commission, in approving plans for consolidations, to impose "such terms and conditions as it may deem proper." Among these terms and conditions may be included an agreement that no attempt shall be made to restrict the use of any gateway, or to discriminate in ervice, or to eliminate the differential rates via the northern gateways. Any evidence of a tendency to depart directly or indirectly from such an agreement could be corrected by the Commission.

It is not at all probable that the adoption of the Trunk Line plan would have any effect whatever upon the very small amount of export traffic which now moves over New Haven rails to Boston for export

through Boston or that which moves over the Boston & Maine from its Canadian connections. Under present conditions the New Haven's export traffic from Trunk Line territory is negligible. The control of that road by the Baltimore & Ohio or the Pennsylvania, therefore, even if it reduced that volume (which is unlikely) would mean little to Boston. Whether such traffic will move via Boston, New York, Philadelphia or Baltimore will be determined by factors which have but remote connection with alternative plans for consolidation. On the other hand, if the Boston & Maine were a part of the New York Central it is likely that there would be an increase in the amount of export traffic through Boston, as the New York Central needs an additional outlet to relieve its overloaded New York terminals, and the Boston & Albany will soon reach the economical limit of its capacity. It is apparent, therefore, that opposition to the Trunk Line plan on the score that it would be inimical to the interests of the Port of Boston is not well founded.

Likewise, with respect to coastwise boat service, it is not likely that Trunk Line control of the New England carriers would result in restrictions or unfavorable discrimination against New England. Under present conditions the railroads ordinarily charge their full local rates to tidewater, the boat lines adjusting their rates as may be necessary to secure the traffic. Under Trunk Line control the railroads could charge no more than their full local rates as at present, and any attempt to cripple the boat lines by restrictive railroad service may be checked by appeal to the Interstate Commerce Commission.

The belief held by some persons that the problem of divisions on interline freight revenue would be solved advantageously to New England if the New England roads were combined into one system so as to present a solid front to the Trunk Lines in demanding a larger share of such revenue does not rest upon solid ground. It might be that New England would be in a better position to drive a bargain, but just as New England appealed to the Interstate Commerce Commission and won its recent approval of New England's contention that the divisions were unreasonably favorable to the Trunk Lines, so the Trunk Lines would undoubtedly appeal to the Commission if the New England roads as a unit insisted upon divisions which the Trunk Lines regarded as unreasonably favorable to New England. Bargaining power in such cases cannot force concessions which are inherently unreasonable. The Trunk Lines could not be forced to go beyond the point of reasonableness. If an attempt were made to push them beyond that point they would naturally prefer to appeal to the Commission. In the event of such an appeal the question would be decided upon its merits, just as the recent case was decided, rather than upon relative bargaining powers. In any event, the whole matter is likely to be settled before any plan of consolidation can be made effective, and if the Trunk Line plan is adopted the greater part of the problem of divisions will disappear.

The bogey of absentee management loses its frightfulness on close inspection. Throughout the length and breadth of the land we find many instances in which a railroad centrally managed in New York or in Chicago is faithfully serving several sections of the country, many of them competing. The Santa Fe, for example, is satisfactorily serving the Central West, the South West, and the Pacific Coast. Many other examples might be mentioned. The logic which demands strict local autonomy for New England as a whole demands also that separate transportation units should be formed for the protection of the Puget Sound section, Southern California, Texas, Florida, and the Michigan peninsula. To follow the process of logic a little further it would apear that inasmuch as there are distinct differences between northern and southern New Eng-

land there should be two separate transportation systems for New England.

It is unnecessary, however, to deal entirely with conjecture in discussing the possible effects of Trunk Line control of a New England carrier. Since 1900 the Boston & Albany has been leased to and controlled by the New York Central from New York City. While it is true that there was considerable dissatisfaction during the first few years of outside control the cause for that dissatisfaction was removed in 1907. During the past 15 years absentee control has not been the occasion of legitimate complaint against the management of the Boston & Albany. The transportation service of that road, its responsiveness to local needs, and its regard for the best interests of the territory which it serves, may not fairly be criticized. New York Central control has not hindered the development of the Boston & Albany nor the expansion of its export and import facilities at East Boston. As a matter of fact during the trying times of railroad congestion in 1911, 1917 and 1920, the Boston & Albany was found to be most adequately equipped and it gave the best service of any of the New England roads, although operated as a part of a Trunk Line, with executive headquarters in New York.

Looking at the subject broadly it appears that New England will work against its own welfare if it insists upon regarding itself as a separate economic unit distinctly different from the rest of the country, and allows a spirit of provincialism to accentuate the barrier of the Hudson river. Its real interests will be served better by integration with other sections than by isolation which sets up the six states east of the Hudson as a territory apart from the remainder of the United States. Economic and commercial interdependence demands closer associations with neighboring states and sections, and a breaking down of divisions based upon historical and sentimental traditions.

If the New England roads were self-supporting and could meet the present and future needs of the section which they serve under rates which would not be prohibitive, sentimental consideration should be given full weight. In this case, however, it is plain that a consolidated New England system, in its present impoverished condition, with its low earning power, and with its needs for large sums of new capital for improvements absolutely essential to satisfactory and economical service, is not self-supporting and cannot raise the required capital on reasonable terms. A rate scale which would yield the necessary additional revenue might be higher than could be borne by New England's commerce and industry, and because it might overburden shippers and discourage the movement of traffic, the net result of advancing rates might be less favorable than under present rates which do not yield adequate income.

Because of its relatively high terminal density; its network of junctions, yards and branch lines; its relatively low traffic density; its relatively short hauls; and its unusual diversity and diffusion of traffic; the property investment and the operating costs *per unit of traffic* in New England are much higher than those of the lines west of the Hudson, with their greater tonnage density and their longer road hauls. The advances in the art of transportation in recent years have been greatest in train operation on the line between terminals and on roads with heavy traffic. These advances have been least in the operation of stations, terminals and yards, and on lines of low traffic density. Operating expenses in New England, therefore, have tended to increase in greater degree than on the roads with heavier traffic and longer hauls, and New England is at a disadvantage in comparison with the Trunk lines in operating costs, particularly in the important item of fuel.

Summarizing the foregoing discussion of railroad consolidation from the viewpoint of New England it may be said that

while sentimental and historical considerations and pride in local institutions favor the New England group plan, yet the paramount importance of the financial factor dictates the necessity of recognizing the hard fact that pride and tradition alone will not pay the bills. Financial aid is imperative. It cannot come through an all-New England consolidation. It may be had by consolidating the New England railroads separately with the strong Trunk Lines under terms which, while advantageous to the Trunk Lines, will result in equally as good, if not better, service, maintenance of competition in rates and service, and availability of funds for essential improvements in facilities and equipment.

THE EFFECT OF HEDGING UPON FLOUR MILL CONTROL

By RALPH D. STILES

FLOUR mills have received scant attention in the many discussions on accounting subjects which have appeared in recent years. While uniform cost and general accounting systems have been put forth for many industries, there have apparently been no systems developed for flour mills beyond those in a few pamphlets issued while the milling industry was under federal control. These systems practically ignore the effect of hedging upon the financial, operating, and cost statements of flour mills. These governmental publications failed to deal with hedging, because when they were issued government price-fixing eliminated the necessity of hedging.

Hedging is so vitally connected with the operation of a flour mill that it must be considered in connection with almost every phase of flour mill accounting. In order that their accounting systems may show the results of hedging operations, millers have been forced to adopt certain practises which have been criticized by accountants. When the principles of hedging are understood, however, these practises are seen to be the only correct and logical ones to follow in operating a flour mill accounting system.

Failure to realize the fundamental significance of hedging has led the Federal Trade Commission, in its Report on Commercial Wheat Flour Milling, to state on page 55: "Cost accounts (of flour milling corporations) were seriously vitiated by the use of market value in the place of actual or average cost of grain, flour, and sacks in taking inventories. This bad accounting practise was defended as offsetting to some extent the equally bad practise of increasing or decreasing profits by the estimated profit or loss on unfilled orders. The latter practise is the more to be condemned because it transfers profits or losses from the year in which they are realized into the preceding year, while continuing to show the sales in the year in which the delivery is made. It was fortunately found possible, however, to place the wheat and flour inventories of the important companies on an approximate cost valuation, and all estimates of gains and losses on unfilled orders were rejected."

While the above statements might seem justifiable to a student of standard accounting theory, an accountant familiar with the practical aspects of flour mill hedging operations would reject the above paragraph as entirely incorrect. As long as accountants do not take into consideration the fundamental differences which set off the accounting systems of flour mills which hedge from those of other industries, their efforts are doomed to failure. It is an accepted principle of constructive accounting that a system must fit the needs and peculiarities of a business. The business cannot be revolutionized to fit the theories of an accounting system.

I. Theory of Hedging as Applied to Flour Mills

As a result of the lack of general understanding of the purposes and nature of hedging, it has been the object of many unjustifiable attacks. The scope of this article does not include an analysis of these criticisms. Suffice it to say that in the great northwestern milling territory no conservative miller or miller's banker would consider that a flour miller was

using ordinary business judgment if the risk of loss due to price fluctuations were not insured against by hedging.

In order to understand how hedging eliminates speculation and risk, the following points must be kept in mind:

1. The prices of cash wheat and of future contracts for delivery in subsequent months (May, July, September, and December) fluctuate in very close harmony. A careful statistical analysis of cash and future price relationships during normal periods has shown a uniformity of movement of 90% or better.
2. Since wheat is a seasonal product, a flour mill, in order to secure the proper grade and quantity of wheat, must often buy enough wheat when the crops are moving to last until the new crop is marketed. Since the price of wheat is subject to sudden fluctuation, a drop of 15 to 20 cents in price might bankrupt a flour mill having millions of bushels of wheat in its elevators or purchased on "to-arrive contracts," because the flour made out of this wheat would necessarily be sold at the new price basis.
3. A flour mill must make contracts months in advance for delivery of flour. Since the sales price is based on the cash wheat price existing on the day of sale, which at certain seasons of the year is prior to the purchase of the wheat by the mill or to its production by the farmer, a rise in price before the wheat is purchased would result in heavy loss to the mill. Although the consumption of flour is practically constant, the demand as represented by orders for future delivery is extremely variable. One year a flour mill may have orders which, if expressed in bushel equivalents, far exceed its wheat stocks, while at the corresponding time the next year the unfilled orders are but a small fraction of the wheat stocks. The miller must be prepared to meet any situation which may arise, at the same time protecting himself against loss due to price fluctuations. He accomplishes this double purpose by careful hedging.

Manufacturers, who purchase large quantities of raw materials in advance of current needs or who book orders for future delivery at current prices, are familiar with the dangers of loss involved. The risk is especially great when the manufacturer deals in a commodity such as wheat, in which there are rapid price fluctuations and narrow manufacturing profits.

Many manufacturers protect themselves from the risk by purchasing each day only sufficient raw material to manufacture that day's sales for future delivery. In this manner, a perfect hedge is maintained; the raw material is bought and the finished product sold on exactly the same price level. A manufacturer who has made this kind of hedge, if he knows the amount of the material to be used in making the finished product and the average manufacturing, selling, and administrative expenses, can set a selling price which will yield his estimated return for the service performed, regardless of the delivery date on the sales contract.

The cost price can be estimated as follows:

Cost of raw material (units required to make finished product multiplied by unit price on sale date)	$x.xx
Estimated manufacturing, selling, and administrative expenses	x.xx
	$x.xx

Using these costs, the manufacturer will set a price based on current conditions, which will result in a maximum profit or, if a profit is not possible, a minimum loss. There is a tendency among cost accountants to assert that selling price must be based on cost and to add a percentage to cost to set the selling price. The events of the past two years have shown that the selling price sometimes must be cost or below. Cost figures are not necessarily to be ignored or eliminated, but must be considered in the light of current market conditions. Selling price always depends upon the exchange value of a product at time of sale. It is a generally accepted principle of economics that, although the exchange value of a commodity in the long run must equal or exceed its cost of production, this value at certain stages in the business cycle falls below cost on account of market conditions as represented by demand and supply.

II. Hedging in Practise

Because of the conditions of seasonal production, constant consumption, and

periodic demand which prevail in the flour milling industry, the miller cannot maintain a daily balance between raw material stocks and unfilled orders by purchasing each day the actual wheat to cover that day's flour sales. In order to secure in another way a daily balance between wheat purchases and flour sales, and for this purpose only, the miller enters the future trading floor. He may either buy or sell future contracts to maintain this balance.

If, for example, on July 1 the sales of flour were 6,000 barrels requiring 30,000 bushels of wheat (assuming that five bushels of wheat make one barrel of flour)[1] while the purchases of cash wheat were only 12,000 bushels, the miller would purchase future contracts for delivery in some future trading month, September perhaps, to the amount of 18,000 bushels.

A flour mill prepares every day a "long and short statement," showing the relation between wheat purchases, flour sales, and future trades of the day. The statement for July 1 is shown below:

Wheat purchases	12,000 bu.	
Futures purchased	18,000 bu.	
		30,000 bu.
Flour sales (bushel equivalent)		30,000 bu.

The fact that the miller has purchased a September future contract does not necessarily mean that he will accept delivery of wheat on these contracts. Millers ordinarily prefer to inspect the wheat they purchase to insure that it conforms to their milling standard. The wheat delivered on future contracts is of the lowest possible grade that will satisfy contract requirements. A large quantity of this "contract wheat" would be very undesirable. When the miller desires actual wheat, he purchases cash wheat and sells the September future, thus maintaining his hedge and securing the desired grade of wheat. If the miller desires to keep in effect the quantity hedge without accepting actual wheat, he may sell the September future and purchase the December future.

Now, if the sales on July 2 were only 2,000 barrels of flour (equivalent to 10,000 bushels of wheat) while wheat purchases were 15,000 bushels, the miller would hedge by selling futures for 5,000 bushels. The "long and short statement" for July 2 shows the maintenance of the hedge:

Wheat purchases	15,000 bu.	
Flour sales (bushel equivalent)	10,000 bu.	
		15,000 bu.
Futures sold	5,000 bu.	

The practical working out of the principle of hedging is illustrated below. In the following examples the future price has been assumed to exceed the cash price by an amount sufficient to cover "carrying charges;" that is, storage and handling, interest on capital invested, and so forth —about ½c a month.

EXAMPLE 1.

Assume: 2,000 barrels of flour sold when cash wheat is $1.25; futures for 10,000 bushels purchased at $1.26 to protect sale.

(2,000 x 5 bushels = 10,000 bushels)

Now, if the cash price rises to $1.40 and the future to $1.41, at the time the miller buys the cash grain and sells the future, the profit on the option just offsets the loss on the unfilled order, as is shown below:

Future Contract:

Sold 10,000 bu. @ $1.41	$14,100	
Purchased 10,000 bu. @ $1.26	12,600	
Profit on Future Contract		$1,500

Unfilled Order:

Cost of 10,000 bu. of wheat @ $1.40	$14,000	
Estimated cost of 10,000 bu. when sale was made, on $1.25 price basis	12,500	
Loss on Unfilled Order		$1,500

If the price of wheat had dropped 15c, to $1.10 cash and $1.11 future, there would have been a profit of $1,500 on the unfilled order, which would have been counterbalanced by a $1,500 loss on the future contract. If the miller had not hedged by purchasing the future, he would have made a speculative

[1] The yield basis, i. e., the number of bushels of wheat necessary to produce a barrel of flour, is assumed to be five bushels. The exact yield changes constantly, depending upon the efficiency of milling operations, the character of wheat used, and the grade and standard of flour produced. Many involved problems arise in determining the exact yield to be used in reducing bushels of wheat to barrel equivalents and barrels of flour to bushel equivalents. The use of the yield is further complicated by the necessity of calculating the amount of by-products produced by various yields. The amount of by-products and their market price have a significant effect upon the determination of the net cost of a barrel of flour.

profit of $1,500. He is, however, willing to sacrifice this possible speculative profit in order to insure the normal return for his milling services.

EXAMPLE 2.

Assume: 10,000 bushels of cash wheat purchased at $1.25. No flour sales made.

The miller will protect himself by selling futures at $1.26. If cash wheat falls to $1.10 before the flour is sold, there will be a loss of 15c a bushel on the wheat. There will, however, be a counterbalancing profit in the future trade, since the future price will have dropped approximately 15c also, or to $1.11.

Future Contract:

Sold 10,000 bu. @ $1.26.....$12,600
Purchased 10,000 bu. @ $1.11..... 11,100

Profit on Future Contract.....$1,500

Wheat Inventory:

Purchased 10,000 bu. @ $1.25.....$12,500
Sold (Flour Sale) 10,000 bu. @ $1.10. 11,000

Loss on Wheat Inventory.....$1,500

If the price of wheat had risen 15c a bushel, there would have been a $1,500 profit on the wheat and a loss of $1,500 on the future, which the miller would be willing to pay to insure the return on his milling operations.

"Hedging" and "future trading" do not necessarily mean the same thing. A flour mill may be completely hedged without being "long" or "short" a single bushel of grain on any future trading floor. Such a hedge exists when unfilled orders are equal to wheat stocks on hand or purchased "to arrive." As soon as this balance is disturbed, it is re-established by buying or selling futures.

III. Methods of Accounting for Profits and Losses on Future Trades

The purpose of hedging is to insure as soon as the sale is made the estimated manufacturing return beyond the possibility of loss, except in the case of the cancelation of orders. Sales of any considerable size which are made at branch offices throughout the country are usually telegraphed in to the main offices of the large milling companies, so that they may be hedged within a few hours after the sale, on approximately the same price level.

When the miller makes a future trade, he must advance margins to cover any losses due to a rise in price if he is "short" or a fall in price if he is "long." If the price of futures continues to go against him, he must advance more margins, thus automatically paying his losses from day to day. If, however, the market goes in his favor; that is, rises if he is "long" or falls if he is "short," he may draw down profits in excess of margin requirements.

When the trade is closed, the commission house handling it renders a Purchase and Sale Slip. This slip shows the profit or loss, as measured by the difference between the selling and purchase prices of closed future trades. The profit or loss is credited or debited to the miller's account, which is kept on a running basis.

Flour mills maintaining membership in a Chamber of Commerce Clearing Association bring their future trades to the market every day. The Clearing Association acts as a buyer to each seller, and a seller to each buyer. The profit of one member is automatically offset by the loss of another member, so that profits and losses may be cleared daily in a manner similar to that used in bank clearing houses. Every member receives a check for his profits or gives a check for his losses daily, the settlement being based on the closing price on the trading floor. The profit or loss on these trades is thus taken into the accounts daily as paid or received.

The profits and losses of a flour mill may be divided into:

1. REALIZED PROFITS AND LOSSES ON
   (a) Deliveries of flour and by-products.
   (b) Closed future trades.
   (c) Future trades on which profits and losses are cleared daily.
2. UNREALIZED PROFITS AND LOSSES ON
   (a) Wheat inventory value fluctuations, found by comparing the market price with the cost of the wheat.
   (b) Unfilled flour and by-product orders, found by deducting from the sales contract price of these orders the cost of flour and

by-products actually on hand plus the estimated cost at market to make sufficient additional flour to fill the remaining orders, after making adjustments for an oversold or undersold condition in connection with by-products.

(c) Open future trades. (An open trade is one on which a future has been bought or sold and is still outstanding at the date of the "cut-off," the milling term for closing the books. An open trade becomes a closed trade by a contra deal; i. e., by a sale if the open trade is a purchase, or by a purchase if the open trade is a sale.) The profit or loss on open trades is found by comparing the closing market quotations of the futures on the "cut-off" date with the price at which the future purchase or sale was made.

The quotation from the Federal Trade Commission's report criticises the accounting systems of flour mills for taking into account the unrealized profits and losses. These profits and losses are determined by "bringing all factors to the market," a process employed in closing the books of flour mills, grain dealers, and elevators.

By means of this hedge the miller has kept his wheat inventories and unfilled orders adjusted to the market, since the losses on one side of the hedge are counterbalanced by profits on the other. Actual cost is from the hedging point-of-view market price, since the hedge automatically adjusts costs to the market. Therefore, all factors must be brought to the market, if the operating and financial statements of the company are to reflect the true condition of its affairs.

The accountant trained in standard accounting procedure may think that the use of market values is wrong, but he experiences great difficulty in convincing a miller that wheat which cost $1.50 would be valued at that price if it has been hedged and has risen in value to $1.75. As a result of his hedging the miller has paid out a loss of 25c a bushel or has taken this loss into his accounts in losses on open trades or unfilled orders, and therefore most logically feels that he is entitled to take into consideration the 25c profit on his cash wheat. In the same manner, if wheat has dropped to $1.25 the miller values it at market rather than at cost and considers it justifiable to take into his profits the 25c a bushel made on open trades or unfilled flour orders.

The question may logically be asked why unrealized profits cannot be entirely ignored and only realized profits considered. This may be done, but the results secured are almost certain to be misleading.

Assume, for example, that a miller buys 2,000,000 bushels of cash wheat in October at $1.00 a bushel. He hedges this wheat by selling December futures at $1.01. Prior to December, the price of cash wheat rises to $1.40 and December futures to $1.41. The miller does not wish to make delivery on the December futures, because he wishes to keep his wheat to fill orders for flour received in subsequent months. He does, however, desire to remain hedged. Therefore, he closes his December trade by buying December futures and sells May futures. In order to close the December futures he must take 40c loss per bushel, or $800,000. In every sense of the term the $800,000 is a realized loss, as it has been paid out or charged to the miller's account. The miller still has 2,000,000 bushels of actual wheat on hand, which has appreciated in value 40c a bushel. If this wheat were inventoried at cost rather than at market, a loss of $800,000 would be imposed on one period and an unearned profit of $800,000 credited to subsequent periods when the flour made of this wheat was delivered.

The results would be still more misleading if the profits and losses on open trades were settled daily through a Clearing Association. To include in the results of a period the profits or losses on open future trades, as they must be included, and yet to deny that the counterbalancing elements may be considered is to make the accounting statements valueless as a guide to actual profits or losses of the business.

When the significance of the methods followed in flour mill accounting is under-

stood, it can be seen that the figures as to comparative yearly profits so carefully computed by the Federal Trade Commission are subject to most serious criticism.

It may be said that the miller is considering his profits as based on sales. He admits this and says that he is doing exactly that when he hedges each sale by buying cash wheat or a future. He feels that the unrealized part of this profit has been amply protected by his hedge.

It may also be said in criticism that orders for flour may be canceled and that the profit may never be realized. The miller admits this, but advocates taking this loss in the period in which the cancelation occurs. Until the sale is canceled, it is protected by a hedge. As the market fluctuates up and down, profits or losses on the hedge result. These profits or losses must be taken into account as they occur and are actual profits and losses even though the sale is subsequently canceled. When the sale is canceled, the resulting loss or profit on the sale is shown in the unrealized section of the operating statement for that period and the hedge on the sale is removed. The average cancelations are usually not very numerous—not more than 2% or 3% of the total sales.

IV. Accounting Safeguards

In considering his unrealized profits and losses as a part of his net profit or loss the miller uses certain safeguards, which result in statements which are conservative and at the same time really indicative of the results of a period:

1. The division of the net profit or loss into the realized and unrealized profit and loss.

   A board of directors, in studying an operating statement, would be interested to know the net profit or loss, but would also desire to learn the amount of the profit which was unrealized although protected, or the amount of the loss which was as yet unrealized, but which would occur in subsequent periods.

2. The carrying forward of unrealized profits and losses to subsequent periods.

   If the unrealized profits on the "cut-off" date are carried forward as an asset on the financial statement, as must be done to enable the results of the operating and financial statements to balance, they automatically become a debit to the subsequent period in the same manner as an opening inventory. The new period cannot show a profit until it has taken into its net profits an amount sufficient to offset the unrealized profit considered in the earnings of preceding periods.

   In the same manner an unrealized loss is carried forward as a liability on the financial statement to be credited to the next period. When this subsequent period suffers the loss which was already taken into account in preceding periods, the amount of this loss will not appear in the current profit and loss.

   Profits and losses are considered but once, that is, at the time of sale. From the time of sale to the time of delivery, the profit is unrealized; after delivery, it is realized. For example, if the unrealized profits on the date of a "cut-off" were $3,000, this unrealized asset of $3,000 would be debited to the succeeding period. If, in this next period, no sales were made, but all deliveries made on unfilled orders, all wheat used, and all future trades closed, the realized profit would be approximately $3,000. Against this credit of $3,000 would, however, appear the debit of $3,000 from the preceding periods, showing neither profit nor loss for the current period. This would be the result expected, since there were no sales. Each period is placed upon its own merits, so that the results indicate the profits or losses being secured from sales during that time.

3. The use of conservatism in estimating the expense per barrel in manufacturing and delivering the flour to fill unfilled orders.

   The higher the estimated expense per barrel, the less will be the profit or the greater the loss on unfilled orders. Following the usual conservative characteristics of flour mill accounting, the cost is estimated at a figure sufficiently high to cover all expenses plus a reasonable margin for safety.

V. Conclusion

Accounting statements showing both realized and unrealized profits and losses must be prepared by every flour mill which attempts to hedge, if these statements are to reflect actual results. This method of preparing statements is founded on the fundamental accounting principle of making the accounts of a corporation show its true condition. The operating statements

take into consideration every loss as soon as it makes its appearance and distinctly show the profits which are fully realized and those which are to be realized, but which are protected by a policy of careful hedging.

Until cost and general accounting statements and systems designed for use in the milling industry are adapted to fit the necessities and peculiarities of the business, as outlined above, millers cannot be expected to give them serious attention.

THE USE AND LIMITATIONS OF PSYCHOLOGICAL TESTS

By DANIEL STARCH

THE business world is interested in two things: (1) The control of machines and (2) the control of men—the control of physical forces and the control of human forces. Most of our advancement and most of our applied science have been aimed in that direction. Most of the progress made thus far has been made in the control of physical forces and machines. Some progress, although much less, has been made in the scientific control of human forces.

In the first place, present-day psychology is attempting to show incidentally the fallacy of the old but persistent pseudo-systems of evaluating and analyzing character; but in the second place, its main interest is in attempting to show the possibility of applying scientific methods to the problems of controlling human forces.

Business consists of human reactions and relations because business is done by human beings, and in that broad sense business is psychological in nature. Business and industry consist in the control of human beings who in turn control the physical forces, materials and machines. We shall not attempt here to deal with this large field, but we shall confine our discussion to one concrete aspect, namely, the evaluation of given individuals by scientific methods in relation to specific tasks to be done.

Beginnings are now being made in the application of the scientific methods of psychology to these problems. Methods already available are being used or adapted, and new ones are being devised. With the increasing recognition of the importance of these problems, and with the pressing need of preventing the control of human forces from lagging too far behind the control of physical forces and materials, far-seeing business men are turning to psychology for the possible help which it may be able to render, and psychologists are now recognizing that the human problems of business and industry are extremely important psychological problems and are endeavoring to apply their methods and technique to the solution of them.

The problems of human engineering have of course always been recognized. This is indicated in no better way than by the extent to which business men have turned to all sorts of methods which have had a semblance of plausibility. So-called professional character-analysts have long flourished and are flourishing today to a remarkable extent. It is surprising to observe to what extent able, intelligent business men have turned, and are still turning, to the methods and counsel of the quack with his boasted, ready-made, dogmatic and infallible methods of dissecting the mental and moral qualities of persons in relation to a given task. Possibly the explanation is that these schemes on the surface seem plausible, and that the busy executive has not had time or opportunity to examine them critically.

I. Fallacious Systems of Selecting Employees

Before I shall attempt to outline and illustrate some of the approaches that are now being made in a thoroughly scientific way by present-day psychology, I wish to point out concretely how the charlatan operates and the extent to which business concerns manned by talented executives,

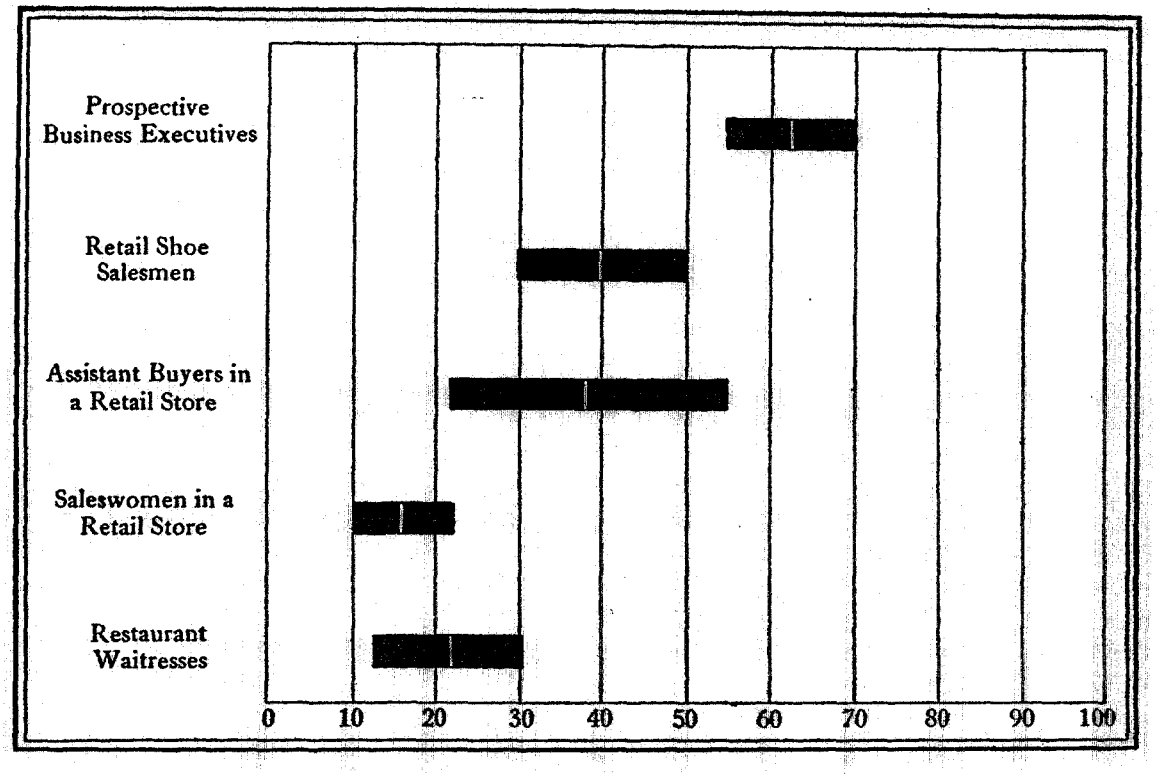


FIGURE 1: RESULTS OF PSYCHOLOGICAL TESTS APPLIED TO VARIOUS GROUPS OF EMPLOYEES

accept and pay in a substantial way for such counsel in the selection of employees. Two or three instances will suffice.

A typical example of such procedure is the following case. A large automobile concern wishing to secure two salesmen inserted a notice to this effect in the classified section of a Sunday newspaper. Some fifty applications were received. The company wrote each applicant a letter asking each one to appear at a given time and place. On this occasion the character-analyst, regularly engaged for the purpose, arrived to look over these men and to make the selection for the company. His first step was to meet all of these men in one room to shake hands with them, and by a glance, to reject as many as he decided to be unfit on this simple superficial basis. The remaining men, a relatively small number, were then taken to another room and gone over more fully according to his system of analysing facial and cranial features. His system differed in no essential respects from the ones currently known. Two men were thus selected and employed by the company.

Another illustration is that of a company which wished to secure an important executive. In this case the official of the company responsible for the selection of this executive turned to the art of graphology for an analysis of the characteristics and qualifications of the applicants. Each applicant was asked to present a sample of his hand writing. These samples were then submitted to a graphologist and on the basis of his analysis and recommendation the selection was made.

A third example is that of a company which inserted a notice in a well-known and widely circulated business periodical advertising for applicants for a certain important executive position by asking in the announcement to have the applicant send a picture of himself in various atti-

tudes, including a front view, a profile view, a front view with the palms of the hands showing and another view with the backs of the hands showing. The choice was to be made according to the facial, cranial, and manual features shown in the photographs.

Certain systems of these types of character-analysis are now widely distributed. Since the terms "phrenologist," "physiognomist," "palmist" and "graphologist," have fallen into disrepute, the persons practising these arts now refer to themselves preferably by the term, character-analysts and sometimes even "applied psychologists"; but the methods and systems are substantially the same as those which have existed for a long time under the former names.

Space will not permit here a detailed discussion or critique of these systems. Suffice it to say that the classifications of persons into such types, as motive, intellectual, square-headed, triangular, convex, concave and the like, by the shape of the face or the contour of the head, and the supposed corresponding mental and moral qualities which are predicated on their basis are unfounded, and would need no refutation from the standpoint of present-day experimental psychology, were it not for the extent to which such theories are accepted by many persons and acted upon in managing men.

The study of the brain and the investigations of experimental psychology have shown that the contour of the face and the contour of the brain give no direct measure of the strength or relative predominance of various intellectual and moral traits. It is true that the sensory and motor functions have been mapped and located in various parts of the brain with considerable accuracy; however, the complex traits of mind and character are not so simply confined to certain limited areas of the brain. Such moral qualities as punctuality, truthfulness, or such intellectual qualities as discrimination and judgment, clearness and rapidity of thinking, or knowledge and range of information, are not confined to specific or limited areas. They are so complex that they involve large portions of mental and cerebral functions if not actually the entire brain capacity.

To illustrate the unfounded nature of one particular method of interpreting traits of character by hand-writing, we may note that practically all systems of graphology agree that an upward slant of the lines in hand-writing on an unruled sheet of paper is an indication of an ambitious nature. Incidentally, it may be pointed out that most of the traits in many of these schemes are based on superficial analogy. An upward slant in hand-writing is at once taken as an indication of an upward looking ambitious nature.

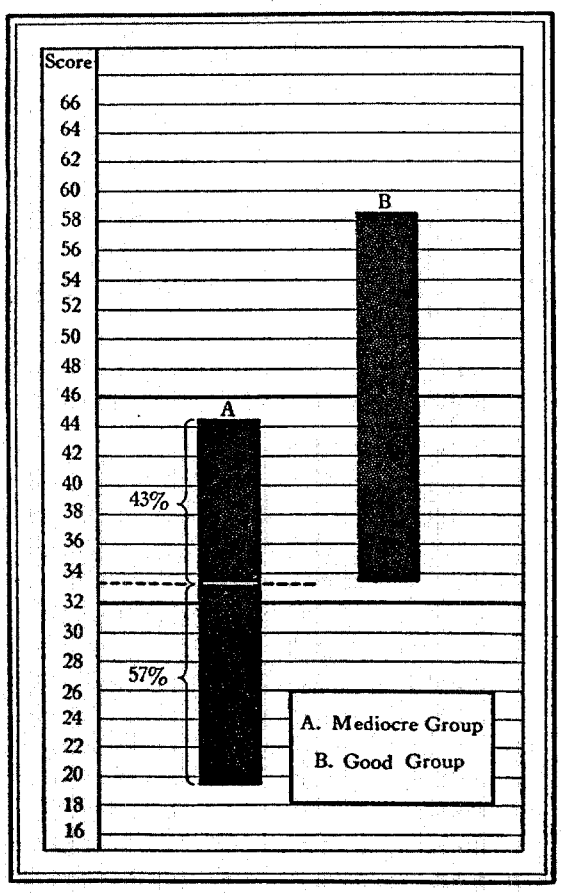


FIGURE 2: RESULTS OF PSYCHOLOGICAL TESTS APPLIED TO SHOE SALESMEN

Dr. C. L. Hull submitted this characteristic to a careful test, by obtaining samples of hand-writing from a group of 17 young men who intimately knew each other. After these samples had been obtained each of the 17 men was asked to rank in order the other 16 men according to his general impression of their ambitiousness. Such a characteristic as an upward or downward slant of hand-writing can readily be measured objectively by a simple device. Accordingly, the 17 samples of hand-writing were measured to determine the amount of upward and downward slant. The amount of deviation up or down was then compared with the combined rank of the 17 men to determine whether or not, according to the judgment of these men, the ones of a more ambitious make-up were also the ones who tended to have an upward slant of hand-writing. The results showed no such relationship. Other traits of character were compared in the same way in these samples of writing and in no case was there any uniform relationship between the actual traits possessed by these men and the careful measurements of that characteristic of hand-writing which is supposed to indicate each particular trait.

II. Accomplishments of Psychological Analysis in Relation to Business

Let us now turn to the question, "What may the scientific methods of present-day psychology do in analysing human character, qualities, and aptitudes for specific types of occupation or tasks"? Up to the present time, it is fair to say that a substantial beginning has been made, that while the experimental investigations are only in their beginning, sufficient work has been done to indicate what the possibilities as well as the limitations are, and what may reasonably be expected in the future.

Two important and specific accomplishments thus far may be mentioned. In the first place, psychological investigations made during the past decade and particularly during the past five years have demonstrated that it is possible to measure general intelligence, ability or mental alertness at least within approximate limits. The possibility of doing this is a large step in the direction of the solution of some of the problems of human engineering. The measurement of general intelligence or mental alertness, as we may prefer to designate measurements of this type, is perhaps the greatest achievement of modern psychology, and possibly one of the greatest achievements of modern times. Consider what this means and what the possibilities of it will be. In all sorts of situations wherever men are concerned, we need to know what are the abilities and aptitudes of the persons concerned and to what extent they are fitted for specific occupations or jobs. We know as a matter of general observation that general intelligence or general ability plays an important role in human intercourse and that varying amounts of it are required for various types of work. While the measurement of intelligence is by no means a complete evaluation of a human being it is one of the few most important elements. The approximate measurement of this important aspect of human nature is a substantial advance in evaluating men in relation to tasks.

In the second place, in addition to the measurement of general intelligence, we are beginning now to measure with some degree of approximation, special aptitudes and qualities required for various types of occupations and tasks. This phase of the work is a very difficult part of the experimental analysis of abilities and personal traits, and is perhaps an even more difficult undertaking than the measurement of general intelligence or mental alertness. Less has as yet been accomplished in this direction; but important and promising beginnings have been made. Besides needing to know what range or level of general intelligence is required for a given job we also need to know what specific aptitude,

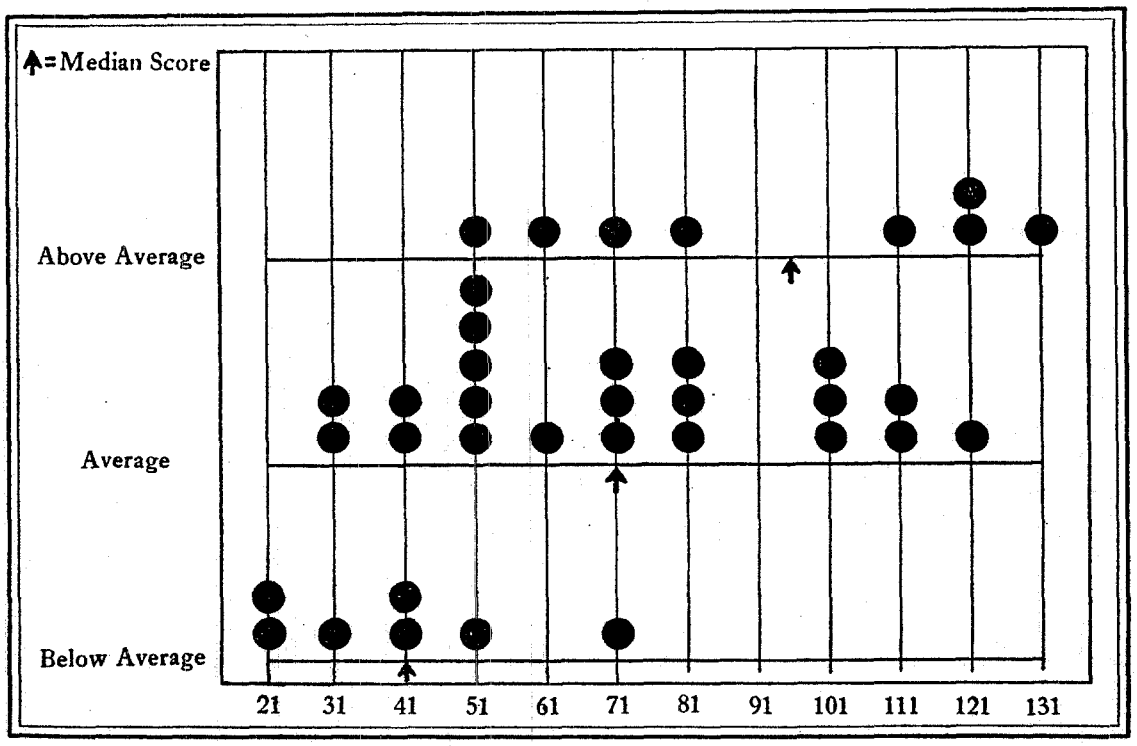


FIGURE 3: RESULTS OF PSYCHOLOGICAL TESTS APPLIED TO RETAIL SHOE SALESMEN AND SALESWOMEN

knowledge and skill within that level of intelligence are needed to be successful in doing the task and in being happy and satisfied in it.

III. Applications of Psychological Tests

Let us turn now specifically to two or three concrete examples to illustrate the manner in which tests of general intelligence and tests of specific occupational fitness may be carried out, the manner in which the results may be interpreted and the extent to which they may be useful to a business concern.

First, let us note the fact that there is a marked and wide variation in the level of general ability or intelligence required for various types of work. This point may be illustrated by examining Figure 1. This chart shows five groups of persons engaged in the various types of work mentioned. The chart is so drawn that the right end represents high ability or intelligence, and the left end represents low ability. Certain recognized tests of mental alertness or intelligence were applied to these groups. The length of the horizontal bar for each group represents the range of general ability possessed by each group. The upper bar represents a group of approximately 300 graduate men students who are preparing themselves to become business executives. The second bar from the top represents a group of retail shoe salesmen. The third bar represents a group of assistant buyers and semi-executives in a retail store of women's furnishings. The next bar represents the saleswomen in the same store, and the last bar represents the waitresses in a chain of restaurants.

The outstanding fact shown by this figure is the actual difference in ability apparently required for these various types of work and also the fact that it is possible to measure this ability with a reasonably satisfactory degree of accuracy. The differences between the groups is marked,

particularly among those in the upper portion of the figure.

It will be interesting in the next place to note the further detailed analysis of several of the groups represented on this chart. Figure 2 represents the shoe salesmen analyzed from the standpoint of their value as salesmen in relation to their test scores. The executive who knew this group of men was asked to classify them from the standpoint of their value as salesmen into three groups, namely: very good, good, and mediocre.

The good and very good groups were combined and are shown in Figure 2 by the upper right-hand bar. The mediocre group is shown by the left-hand bar. It will be noted that the average score of the good group was 46 in the particular tests that were used, and of the mediocre group, 32. The significant fact further is that the tests separated to quite a large extent these two groups of shoe salesmen. The person in the good group who made the lowest score did not fall down to the average of the mediocre group and on the other hand, the highest score made by a man in the mediocre group did not reach up to the average of the good group. While there is a certain amount of overlapping between the upper ones of the mediocre group and the lower ones in the good group, there is nevertheless a definite separation between them. From the standpoint of the selection of applicants, if the particular tests here employed were used, it is evident that if all men with a score of 33 or below on these tests were rejected, none of the good or very good men would be rejected, and 57% of the mediocre group would be rejected. It is clear, therefore, that the use of these tests will help materially in determining a point below which the chances are largely against a person that he will be satisfactory in this type of work.

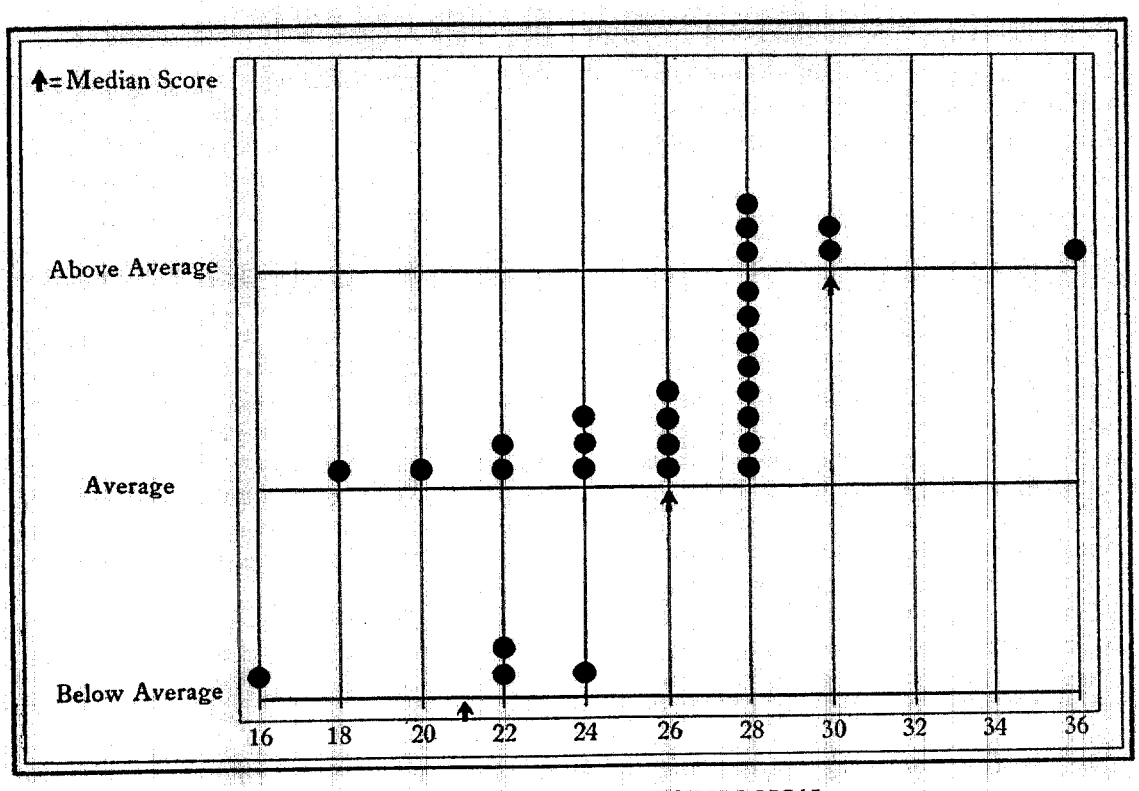


FIGURE 4: RESULTS OF PSYCHOLOGICAL AND OCCUPATIONAL TESTS APPLIED TO SHOE SALESMEN AND SALESWOMEN

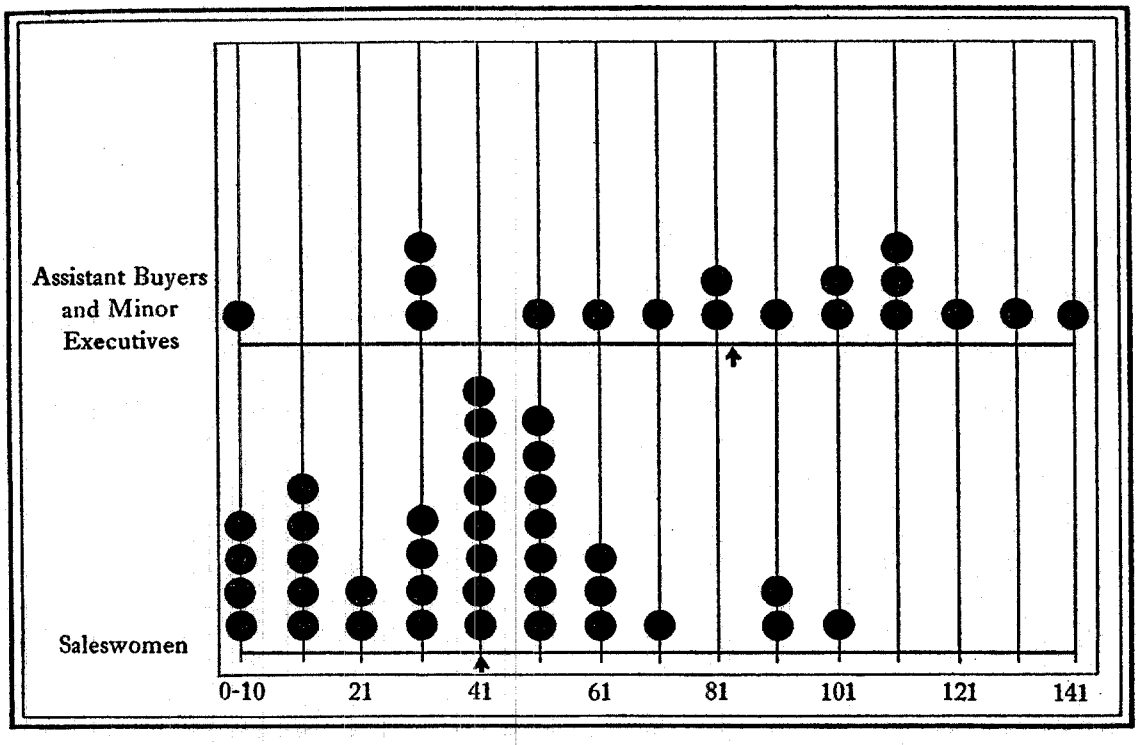


FIGURE 5: RESULTS OF PSYCHOLOGICAL TESTS APPLIED TO ASSISTANT BUYERS, MINOR EXECUTIVES AND SALESMEN IN A SPECIALTY STORE

Figure 3 represents a still more detailed analysis of another group of shoe salesmen and women. In this instance, the executive who knew all of these men and women was asked to put them into three groups, namely, above average, average and below average. Each dot in the figure represents one individual. It will be noted that there is a distinct difference between these three groups. Thus, the below-average group had an average score of 41, the average group had an average score of 71 and the above-average group had an average score of 96. It will be noted, however, that there is a considerable amount of overlapping among the three groups. Thus, the highest scores made by any persons in the below-average group, were up to the lower scores made by the above-average group. The only test used in this case was an intelligence test.

Figure 4 shows another group of shoe salesmen and women who were classified into three groups by the executive who knew them in the same manner as the persons shown in Figure 3. In Figure 4 a more complete differentiation among the three grades of persons is shown as a result of using two tests, namely, a general intelligence test and an occupational shoe test. The scores in these two tests were averaged for each person. The addition of the occupational shoe test served to differentiate the three groups more completely. Thus, none of the persons in the below-average group had a score as high as the average of the average group. The best score made by anyone in the below-average group was much below the lowest score made by anyone in the above-average group. It is obvious that in using tests of this kind for the actual selection of employees from among applicants, the line might be drawn at some point on the left side of the chart such, that the poor ones obviously would be rejected and that none of the above-average and very few

of the average persons would be rejected. The point at which this critical line might be drawn or this critical score be placed would depend upon the particular requirements of an individual concern or upon the need for employees at a given moment. If the need for persons is great the point demarcation or critical score may be lowered; if it is not great this point may be raised.

Figure 5 shows a detailed chart of the assistant buyers and saleswomen in a women's specialty store mentioned in Figure 1. It will be observed that the assistant buyers and minor executives made on the whole considerably higher scores than the saleswomen did. The average of the former was 86 and of the latter 41. It will be further observed that four of the assistant buyers at the extreme left had very low scores. One in fact is as low as the lowest in the group of saleswomen. Upon looking into their records it was found that this particular assistant buyer (a woman) had had some 20 years of experience and that she apparently had been advanced from saleswoman to assistant buyer in order to give her a promotion because of her long service in the store. It was further found that she was really not capable as an assistant buyer and that she should not have been promoted. The same was true, though to a less extent, of the other three assistant buyers who had the next lowest scores. It is evident that these tests serve a very useful purpose in making selections of assistant buyers among the saleswomen. Evidently, the promotions preferably should be made among the saleswomen whose scores are above the average of those for saleswomen.

Figure 6 shows a further analysis of the group of restaurant waitresses represented in Figure 1. In this instance, the waitresses were divided into two groups according to their length of service. All women who had been employed as waitresses for five months or more, up to as high as fifteen years, were placed into one group, and all those whose experience had been four months or less were placed into the other group. The dividing line was drawn at this point because it was the impression of the manager that it required approximately four months for a new waitress to fully learn the job. The two groups are represented by the two vertical bars of the Figure 6. The right-hand bar shows those who had been employed four months or less, while the left-hand bar represents those who have been employed five months or more. The striking fact in this instance is that the average rating in the tests of the group employed five months or more was approximately half as high as the average score of the waitresses employed four months or less. In other words, there is here a negative relationship between the length of service and the test scores. The explanation is probably due to the fact that the waitresses with intelligence above a certain point are not content to remain as waitresses. Concretely, if a series of tests of this type were to be applied, the management could well afford to reject all applicants with a score above, in this particular instance, 32. The chances are very small that a young woman with a score above 32 is likely to remain for any considerable period of time. The average length of service of the group which had been in the employ for the longer period of time, was three years, whereas, the average length of service of the other group was two months. It is evident that from the standpoint of breaking-in new waitresses, it would require the breaking-in of eighteen girls, each one serving on an average two months to furnish the continuous service of one waitress for three years, the average length of time of the longer group.

These results will serve to illustrate the kind of approach and something of the results that may be obtained in endeavoring to apply scientific methods to some of the problems of personnel management. The illustrations show their uses as well

as their limitations. They show that a completely accurate and fully differentiated selection cannot be made by tests devised thus far, as is indicated for example by the overlapping of the various groups in these figures; but they nevertheless do show the considerable differentiation which is possible by means of such tests and that this differentiation evidently is considerably greater than can be made or is being made in the off-hand impressionistic manner that is ordinarily used at the present time.

IV. Limitations upon Use of Psychological Methods

The limitations which such tests have at the present time are centered chiefly around two points. In the first place there is no ready-made series of tests which can be applied in an automatic manner and interpreted off-hand in a mechanical way. It is necessary in each instance to select or devise and to apply such tests for any concrete task or type of job as will most fully meet the requirements and to check these against the actual success of employees.

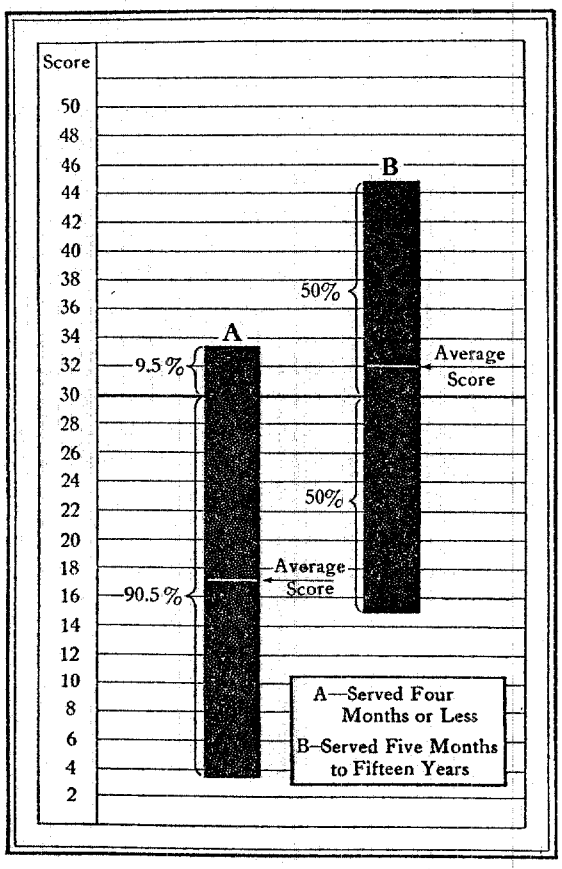


FIGURE 6: RESULTS OF PSYCHOLOGICAL TESTS APPLIED TO WAITRESSES

In the second place, most of the experimental undertakings thus far have dealt with intellectual and general ability traits. It is undoubtedly true that other characteristics are important and the reason why the use of intelligence tests alone has given as much promise and produced as much differentiation between better and poorer workers is that many other traits, personal and mental, are more or less correlated with intelligence. We have as yet not devised any satisfactory method of measuring or evaluating in an objective way, such qualities of personality or make-up as temperamental and emotional likes and dislikes, and attitudes towards superiors or inferiors and toward fellow-workers; nor have we any direct or satisfactory measure of such qualities as reliability, industry and the like, except in so far as they tend to be correlated to some extent with general ability or mental intelligence. We know that such traits are correlated to a moderate extent with general ability, but a more direct evaluation of them is needed.

V. Conclusions

In summary, it seems advisable to outline very briefly the precautions which a business concern or industry should observe in attempting to apply scientific methods to its problems of selection and human engineering.

In the first place, the services or counsel of a psychologist of scientific training and experience should be consulted. Because of the wide spread interest which has developed in the use of psychological testing methods of various kinds, particularly since the recent war, many concerns have hastily undertaken to apply tests of this

sort, with good intentions, but often with disappointing results and failure. The fact is that, particularly at the present time, with no standardized or ready-made tests which may be applied in any mechanical manner, it is highly important that the most expert and best qualified persons undertake not only to devise and apply such tests, but particularly also to analyse and interpret properly the results and the various factors that enter into such complex problems as arise in endeavoring to determine the elements of success or failure for specific types of work. The increasing number of firms which are inaugurating work of this sort in a thorough manner are the ones whose results are proving to be useful.

In the second place, an open-minded attitude on the part of a concern which undertakes experimental work in this field must be maintained so that the work may be done in a thoroughly scientific manner, to ascertain the factors and elements that are important. It is perhaps too much to expect fully satisfactory and approximately perfect results at once. Every concern, at least at the present stage of the work in this field, should expect to undertake a certain amount of experimental research in trying out and adapting the methods to its specific conditions and requirements. Even concerns or industries in the same type of business will be unable to take over bodily, without modification or adaption, the result, tests and methods that may have been developed by another firm or store.

Third, an experimental undertaking of this kind requires, to begin with, as thorough and complete an analysis as possible, of the particular types of jobs or tasks for which testing methods are to be devised. It is highly desirable in this connection that the person who devises methods for a given situation shall himself obtain sufficient first-hand contact with the task, to be able properly to analyse the elements and qualities required for the task.

Fourth, the next step consists in devising new tests or in selecting from among tests already available, such as may be most suitable for the task at hand in the light of the analysis just made. These tests thus selected or devised should then be tried out or tested themselves by applying them to two groups of persons of known ability and performance, that is, to a good group and to a poor group. In this manner, the value of the tests may be ascertained and the extent to which they will differentiate between the good and the poor group may be determined.

The final step will be, to modify the tests in the light of these experimental results, in such a way as to make them as serviceable and reliable as possible.

While the program here outlined may seem somewhat complex and lengthy, these methods have been applied in a sufficient number of instances to give definite promise of usefulness and reliability, so that the actual cost involved even in a thorough and complete investigation will be small compared to the economy and efficiency that will result.

SOME RELATIONS BETWEEN TECHNICAL AND BUSINESS TRAINING

By JOHN GURNEY CALLAN

THE present remarkable growth in number and attendance of collegiate business schools, following a similar growth of technical schools, marks a phase of the response to the increasing exactions and complexities of industrial life, and suggests some thoughts on the relations between technical and business training and activity. The change in living conditions and in personal and social problems wrought by technical progress are familiar subjects, worn threadbare by much discussion—and yet their vast importance may easily escape the comprehension. Still more is it true that since any present status tends to appear as a resting place after an ascent, we continually fail in imagining the increasing gradient and growth that may logically be expected if we can make use of accumulating data, wisely organize industrial effort, and escape interruptions in the arithmetic progression. To borrow Robinson's illustration, if we scale down to 50 years the period that mankind is thought to have spanned, then on that scale we have had in appreciable degree the engineering attack and the scientific method for only three or four days; further, as Professor Black pointed out, the whole people of the United States would have elbow room on a frozen lake 5 miles in diameter,—a mere dot on the map—and if the ice broke, the level of the water would rise only about 1 foot and 8 inches. During this short period of engineering development by a sparse population, the production of economic goods per man per day in America has increased according to Steinmetz in a ratio of more than 30 to 1; and it is difficult to measure the increase in scale and complexity of problems, scope of interests, freedom of thought, sense of proportion and inter-regional fluidity. We are surely right in believing that both problems and opportunities will present themselves as the near future unfolds, on a scale and at a rate that will fully engage our best technical efforts; and it is even more certain that the discovery of so many new things that we can do, will tax organized thinking as to what can best be done with them.

I. Influence of Technical Development upon Business Problems

Most of the earlier inventions were concerned with doing more cheaply and on a larger scale, such things as had in some measure been done before, and the reduction of cost and increase of scale mutually reacted to the present situation, where the direct labor cost for making a fairly good watch is less than one might pay a jeweler for cleaning it, and where a British workman can pay with a day's labor for the freighting of his year's supply of wheat from the fields of Dakota. Thus the first thing that engineering methods and the scientific spirit have done for business has been the development of a vast deal more to be busy with. Meanwhile later inventions have done and are doing some very important things that have never been done before, and some of these are substantially changing not only the routine of living, but also the inherent basis of social crystallization,—the average mental picture of life. It is hard to fully estimate what this means in a prosperous civilization politically ruled by a majority.

In the early technical development of mining, transportation and manufacture, the data were not very complex, and the methods of working out inventions and improvements did not require difficult mathematics or recondite theory; the advancement came through cooperation between men of engineering or inventive genius, and highly skilled mechanics. The administration of these early enterprises was equally elementary, and the ghastly callousness of early owners and executives reflected rapid growth of economic power without historic background or traditions or concurrent growth of ethical standards and collective morality having direct application.

As science and technology developed, the "practical" man and the man of purely general education were progressively less able to cope with the growing subtleties. There are always a few transcendent minds—always fully occupied; but there was an increasing scarcity of commissioned officers for the growing technical army. In fact the inherent unfamiliarity of the elements of their advanced problems imperatively forced upon the engineering fraternity some sort of preliminary education in fundamentals, acquired in school or otherwise. Under this incentive it became apparent that many young men of scientific aptitude and good mentality could be adequately trained in fundamentals and that this training could be carried on in suitable technical schools far better than in the industry itself. No one familiar with all the facts doubts the justification for such schools, nor their permanence. One has only to consider some of the present industrial developments to realize how far the technical front has advanced beyond the early visible, tangible problems, and how practical and essential a tool is the calculus or the theory of electrons.

On the other hand there was nothing imperative to force upon engineer or business man anything like a complete conscious policy as to the uses to be made of the new instrumentalities, although in some degree the mere possession of the new engineering instruments implied their use—we had the fiddle and the bow—there was nothing left to do but fiddle, and the neighbors were not critical. Now the orchestra is tuning up in an expensive hall, the show is advertised, and bad fiddling is less a matter of purely personal concern, especially with an audience that feels that the admission was rather high.

Meanwhile the feeble hand with which in earlier days we attacked our natural resources as well as our fellow-sinners, is growing strong and truly formidably armed—so that the graveyard of good things is already yawning for a procession of our stoutest material retainers. Mankind has maintained himself in his early struggles partly because things have grown up and been discovered faster than his puny tools could destroy them—now his strength is becoming his weakness, and the lack of a defined and intelligent policy as to our common heritage of raw materials carries different implications from those inherent in the days of the *laissez faire* economists; "faire" has acquired a new magnitude.

This vast extension of knowledge of what we can do and how we can do it, has of course commensurately increased the scope and scale of business problems, but the change of emphasis and of character in these problems is quite as apparent as that of scale. The plants and organizations that are the price of cheap production have giant appetites as well as giant capabilities, and a plant not fed with orders to something near capacity soon devours itself and its owners. Unregulated competition has developed inherent severe limitations and dangerous tendencies as scale and fluidity of commerce increased. The instability of rates of business activity much removed in either direction from a somewhat indeterminate mean, has worked out in a well-lubricated, market-controlled system into a short-period oscillation of magnitude large in comparison with margins of profit or even with

equities. Old commodities are passing and in greater degree new ones developing, so that manufacturing plants and equipment are liable to commercial as well as technical obsolescence. Marketing methods have been profoundly changed through influences ranging from the pressure of fixed charges to increase of rural shopping radius due to Mr. Ford. Ethical standards are changing—generally for the better—as a result of experience and conflict, of increase in expectation of life of business units, and of better business machinery and housekeeping, as well as through a real improvement in collective standards and thinking. The changes in attitude, status and mental dramatization of workmen, who are also the chief ultimate consumers, are probably the most important, complex, mutable and erratic of all these many variables out of which the business equations are built.

II. The Differences Between Engineering and Business Problems

We may take it that the growth of business has been fully commensurate in extent with the technical growth from which it draws subsistence, but the cases have not been otherwise parallel on account of underlying differences in the character of business and of technical problems. The dissimilarity that first suggests itself lies in the fact that the component activities making up business are familiar—are analogous to common experience; while those of the technical problems are exotic, foreign to average experience, arbitrary and innumerable to the non-technical mind, like the rules of a vastly complex game, so that practically no headway can be made technically without fundamental concepts. Everyone has bought and sold, hired or been hired, borrowed or lent, paid higher or lower prices, and the simpler of these relations obey comprehensible rules of reason; while no one would naturally suppose that a devastating war could be years prolonged by passing some innocuous common gases through selected hot tubes, or that a particular kind of lamp with a few appurtenances could talk and listen through thousands of miles of empty space.

Another difference lies in the fact that in most cases engineering problems are concrete and definite in extent, so that the engineer is striving to achieve a determinate ultimate objective, and must plan his work through, map out the whole matter, and make his means fit his ends. The business executive on the other hand has a continuous performance, rarely looks beyond an intermediate point, and is, therefore, not driven by stern necessity to think things through and formulate a comprehensive plan. In some measure this is a difference of degree, but the point becomes clearer on following the thought farther. Most business activities are directed to the production of economic goods, and under conditions of specialization these efforts are directed or controlled through the inherent regulatory processes of the market. A man produces one thing and consumes many things; he must market what he produces, and the market must demand his product. His efforts are commanded or diverted through the automatism of the market, and the industrial army is mobilized and marshalled through orders which are written in terms of the medium of exchange, and which are parts of general orders known in full to no man; of a grand plan working itself out through countless individual demands, assembled at the market place through unnumbered paths of trade, arriving and enforcing their mandates, but to the single producer flowing in from a sort of partially mapped outer semi-darkness. Similarly his goods go out to purchasers of similarly fog-shrouded horizon, and neither buyer nor seller is under apparent and urgent need to ask himself how his transactions fit with the general activity, or indeed how they affect his own future business. He may make such inquiries as to the whole plan in which he participates, and with advantage, but he is under no

such compulsion as is the man making technical plans. Usually a dollar offered is a command, and insures the producer's efforts toward obedience.

The economic and financial productive machinery, although built of familiar materials is of dimensions so much greater than are even the major single engineering problems that this common failure to grasp the interactions and reactions finds excuse in the difficulty of visualizing the relation of the parts, but along with this is the fact that the mechanism will work tolerably well and keep most of the people fed and many of them prosperous most of the time, even though it be operated by men who care as little for economic theory as a first-class engine driver does for thermodynamics. Emerson says that we are always as lazy as we dare to be, and it may be expected that the principal incentive to a study of business fundamentals by most business men will always be trouble of one kind or another. The reason that this incentive is stronger than formerly lies partly in the fact that the present larger and less friction-bound business machine, if left to this sort of automatic market control without conscious and understanding purpose, can do more damage than formerly to important members through the oscillations set up by the storing and restoring of economic and psychic energy, in a fashion having interesting mechanical and electrical analogues. The engineer must perforce analyze, identify and damp out such destructive oscillations, and the financier is engaged in making the most intelligent attempt that business history records, to do the same thing, rather than accepting the disturbance as a necessary evil, as was his disposition in an earlier day.

In business, as in engineering, individual achievements have existed in the intangible world of imagination before they have come into being, and the achievement has rarely been greater than the mind of the chief dreamer; but in business as we have just seen a common motivation connects the individual workers otherwise than through conscious mind and effort, and the whole hive is perfectly able to produce an operative aggregate result far greater and more complex than the picture of it existing in the mind of any single worker. The communist proposes to stop the wheels and paralyze industry until his committee can acquire an education, think what to do, and issue orders about things that are in fact going on quite comfortably. On the other hand the extremely hard-boiled citizen may fail to realize that there is practical advantage from understanding more than the local activity; and that the inherent regulation cannot be very good in a market-controlled productive organization where initial material purchase commitments must long precede ultimate consumption, and where contagious emotional thinking is an important factor in determining production rates.

No doubt the business world needs the same approach to many of its problems that has been forced upon the engineer, but it must not be assumed that this approach, or the type of mind it produces, can be taken over without change. The intricacies of business and the personal qualities required are by no means the same as those in purely technical work, even when this is of great complexity. The business man is primarily dealing with men, and the engineer with things—and herein lies the greatest difference of all.

III. Training of Business Executives versus Training of Engineers

We come then to the question of types of men, conceptions of life, and personal qualities found and needed among the commissioned officers of the business army. Here, as in engineering, there are always a few men of really great mind in each generation who can in creditable degree grasp and interpret the broad situation without much formal help; further it will always be true that character, work, thought, judgment and decision are the foundations of constructive work. We

may also assume that there will always be many more men who can pick up a business by participation only, than can acquire technical grasp and facility by a similar process. It seems to be true, however, that business has reached a degree of involution, social influence and dynamic power such that it may be thought of as a profession—and by no means the least of the professions; and that we may profitably spend a good deal of time in considering what is the best professional training for the young men who are to take important executive positions in the coming generation. The several alternatives appear to be the picking-up process with or without some sort of apprenticeship, and following preliminary general education of various degrees; legal training; technical training; and a definite collegiate or graduate course in the fundamentals of business. No attempt can be made to discuss these alternatives in parallel column, but it may be interesting to consider more or less at random some of the differences that may be expected from these different approaches, particularly in production.

Of course each different approach tends to build up in the inner consciousness a different dramatization or concept of life, from which subsequent action will spring in some degree automatically. The average engineering student sees the world as a place of law and order, where results are better in proportion as immutable laws are ascertained and obeyed: where the breach of a natural law applying in the case, results in imperfections or disaster, not to be averted by talk in any form; where relations, if not simple, are at least determinate. The natural corollary is a feeling that all executive as well as engineering problems may be unravelled and evaluated by finding and correlating facts, establishing and investigating their relations by something akin to a mathematical process, and setting up the findings more or less as one would set up his equations. Of course a sensible executive with engineering training is not obsessed by this, or by any other fixed idea, but it is likely to deeply color his background and scenery; it is not difficult to see this engineering coloration in present-day business literature—much of it of substantial value. On the other hand, while the technical solution must be right or fail, there is rather commonly no inherent exact time limit, so that an engineer who knows his subject may with patience, an investigative spirit and intellectual honesty, succeed brilliantly in spite of a slow mind—and still more, in spite of an unconvincing presentation, or dearth of human experience.

The lawyer and the business man have also dealt with facts, of course, but these have in far greater measure been set up in man-made relations, mutable, shifting their accepted bases from century to century; matters where opinion, custom and tradition were—and are—intricately intertwined with real knowledge. Under such conditions results can be changed and success achieved by skill in argument, persuasiveness, personal dominance, and evasion of the convention of the moment. Time is often of paramount importance; alertness, adroitness and acumen are among the bright weapons in the legal and business armory. There are indeed underlying sciences, but the relation between perception of and adherence to their laws, and the immediate outcome, has been far more remote than in technology. Undoubtedly this is less true now than when the machinery of business was more crude, and if one may prophesy, it would seem that the condition will become in time somewhat more nearly parallel still to the engineering situation, and that the laws of economics, psychology and the other underlying sciences along with standard methods of analysis and control will furnish a continual illumination, basis and background for the business activities, somewhat as do the physical sciences and recognized forms of mathematical analysis for engineering operations. On the other hand the dealings of man with man—of

mind with mind—are based on the complexities of human motivation and it may be doubted that there will ever be a really general solution—the variables are more numerous than the equations, and even the specific equations of condition may contain imaginary quantities.

When we say that the man best meeting the requirements is one who can grasp the broad relations, benefit by all available knowledge, feel the tides and forecast the tendencies, and still not lose the ancient virtues of will, decision, leadership, and power of concentrated and sustained intellectual and physical work, we have said that he must have a truly educated mind—however he may have gotten it, and a mind with more than a little specific business education—preferably along with broad general training. This brings before business the same educational question that confronted engineering three or four decades earlier, and apparently the answer is to be the same—that for most men, fundamentals are better imparted in youth, in association with others doing the same things, and in the atmosphere of learning rather than exclusively that of doing. In this faith men are flocking to the business schools, and it is the task of these schools to justify this faith, as their technical brethren have done before them.

SIGNIFICANCE OF STOCK-TURN IN RETAIL AND WHOLESALE MERCHANDISING

By MALCOLM P. McNAIR

THE essential problem confronting most merchants in 1921 and 1922 has been the adjustment of operating expenses to lower price levels. This situation has resulted for one thing in greater emphasis on the importance of a rapid rate of stock-turn both as an index of merchandising efficiency and also as a direct means in itself of lowering expenses and increasing net profits. Accompanying the numerous valuable suggestions on stock-turn that have been made to merchants since the business cycle entered its downward swing and the desirability was perceived of utilizing stock investments as efficiently as possible, there have been some more or less contradictory statements and some slip-shod thinking arising from the renewed interest in this subject. On the one hand, merchants have been told that doubling the rate of stock-turn will double the rate of profit, and on the other hand they have been informed that neither profits nor losses are determined by the number of stock-turns and that the rate at which merchandise moves from the shelves during a given period is, in fact, a deceptive index of the efficiency of the business.

Relation of Stock-turn to Net Profits

That the rate of stock-turn is of some significance is, however, evidenced by figures on operating expenses in the wholesale grocery, retail shoe, retail jewelry, and department store trades published by the Harvard Bureau of Business Research for the fiscal year 1921.[1] In the wholesale grocery business in that year 344 firms with an aggregate volume of sales of $487,951,000 showed a common net loss figure of 1.9% of net sales. For the same period 65 firms with a stock-turn rate of less than 4 times a year showed a common net loss of 4.7% of net sales, while 160 firms turning their stock from 4 to 6 times showed a net loss of 2%, and 114 firms which achieved a rate of stock-turn of 6 or more times per year had a common net loss of only 0.6% of net sales. Similarly, while 407 retail shoe stores with a total sales volume of $70,699,000 had a common net loss of 1.9%, those with a rate of stock-turn less than 1.5 times a year sustained a loss of 4%; whereas those with a stock-turn of 2.3 times a year and over made a net profit of 0.6% of net sales. In the retail jewelry trade, also, for 190 firms with total sales of $10,985,000, the common figure for net loss was 6.6% of net sales, and the commonly attained rate of stock-turn was 0.8 times, or once in fifteen months. While 57 firms with a rate of stock-turn less than 0.7 times a year showed a net loss figure of 11% of net sales, 22 businesses which turned their stock 1.5 times and over a year broke even, with total expenses exactly equal to gross profits. Again, in 301 department stores with total sales of $496,238,000 the common figure for net profit was 0.9% of net sales in 1921, but for 95 firms that turned their stock less than 2.5 times the common figure for net loss was 0.8% of net sales, while 111 firms turning their stock 3.5 times and over showed a common net profit of 2.3%. On the basis of data of this sort, it is not de-

[1] Bulletin No. 30—*Operating Expenses in the Wholesale Grocery Business in 1921.*
Bulletin No. 31—*Operating Expenses in Retail Shoe Stores in 1921.*
Bulletin No. 32—*Operating Expenses in Retail Jewelry Stores in 1921.*
Bulletin No. 33—*Operating Expenses in Department Stores in 1921.*

sirable to draw final conclusions, but it is possible to clarify somewhat the relation which the rate of stock-turn bears to gross and net profit and the principal items of expense.

Determining the Rate of Stock-turn

Some of the confusion that has been evident in regard to what stock-turn is and what it does results from failure to define terms clearly. Stock-turn is the actual disposal and replacement of a given stock of merchandise, and the rate of stock-turn is the number of times during a given period that a merchant's average stock on hand during that period is sold and replaced. Since the buying and selling processes are more or less continuous, the money received for merchandise sold from day to day being periodically reinvested in new stocks of goods, the time necessary to dispose of a given stock of goods cannot always be measured accurately, but at the end of a period the total number of units sold during the period divided by the average number of units in stock during the period gives the rate of stock-turn. The use of actual physical units in ascertaining the rate of stock-turn is the ideal method, but unfortunately is of limited application. To employ such a method requires a system of stock records to preserve the complete history of the movement of stocks by physical units, and it appears that in most businesses, both wholesale and retail, such stock records are not kept, especially in those businesses or departments where the average unit of sale is small. In the absence of data permitting the computation of the rate of stock-turn in physical units of merchandise, it becomes necessary, for practical purposes, to figure stock-turn by units of value.

The rate of stock-turn when computed in dollars and cents of cost values (cost of merchandise sold divided by average net inventory at cost) amounts to the rate of stock investment turnover and may exhibit some discrepancy from the rate of stock-turn figured in physical units because of price changes and variations in the value of units, especially in case of a mixed stock. In a stock of jewelry, for instance, including diamonds, silverware, and clocks, the rate of stock-turn as ascertained by the use of cost values conceivably might bear little relation to the rate at which the physical units were sold and replaced. If, as is the case in businesses employing the "retail method of inventory," selling price figures rather than cost figures are used to determine the rate of stock-turn (net sales divided by average net inventory at selling price) the figure obtained will correspond closely to that obtained by the use of cost price figures. The result, however, cannot be called the rate of stock investment turnover, because the element of gross profit has been added to each increment of stock investment. Neither is it equivalent to the rate of turnover of working capital, since that is affected by the promptness with which customers settle their accounts. The virtual necessity of using units of value to measure the rapidity of stock-turn apparently has led to a prevalent error in method; i. e., that of dividing net sales by average inventory at cost. Frequently, when a merchant buys goods worth $5,000 at cost price he assumes, thinking in figures of dollars and cents, that when he has sold goods worth $5,000 at selling prices he has made one full turn of his stock investment and therefore of his physical stock of merchandise, but this is not the case.

For all practical purposes the rate of stock-turn as determined by dividing the cost of merchandise sold during a given period by the average net inventory at cost during the period is sufficiently accurate. Of course, the greater the number of inventories from which the average inventory is determined, the more accurate will be the stock-turn figure obtained. The data available, however, as found by the Harvard Bureau of Business Research in its studies of the cost of doing business in various trades, ordinarily include only two inventories a year—those at the beginning

and end of the fiscal year. Although the average inventory as determined from these two figures may not in some cases be thoroughly representative, since stocks are likely to be low at those periods, nevertheless, since all the figures are on the same basis, their usefulness for purposes of comparison does not suffer.[2]

Measuring Significance of Stock-turn

In any discussion of stock-turn, there are clearly two things to consider which must be sharply differentiated. The first is the rate of stock-turn as an *index* of business efficiency, and the second is the rate of stock-turn as a possible direct *cause* of business efficiency. It is necessary first to determine whether a high rate of stock-turn usually accompanies low operating expenses and high net profits. Even if this is found to be the case it does not mean necessarily that the high rate of stock-turn is the cause of the low operating expense and the high net profit. Both may be the result of some other factors, such as the position in the business cycle, the foresight and trading ability of executives, the efficiency of methods of management and control, or any number of local conditions. It is further necessary, therefore, to determine how far changes in the rate of stock-turn in themselves are the cause of variations in operating expenses and net profits.

By what evidence is the significance of stock-turn to be judged? Is a high rate of stock-turn either a customary accompaniment or a necessary cause of (1) large volume of sales, (2) high or low gross profit, (3) high net profit, (4) low expenses?

None of these criteria taken by itself appears to be wholly satisfactory. Volume of sales and expenses are affected by the general price level; net profit is affected by gross profit as well as by expenses; and gross profit may be subject to competitive conditions. Much depends on the basis of comparison used. Figures in dollars and cents offer only limited possibilities. Other possible bases of figuring percentages for purposes of comparison are: (1) volume of net sales, (2) cost of merchandise, (3) average stock investment (that is, the average value of stock on hand during a given period as contrasted with the entire cost of merchandise sold during that period), and (4) net worth of the business.

In considering the use of either average stock investment or net worth as a basis for figuring percentages in order to make comparisons of the effects of varying rates of stock-turn, two points of view should be clearly distinguished; namely, the point of view of the investor or owner of capital, and the point of view of the business manager. In many businesses, of course, one man or a group of men are both investors and owners as well as managers, and therefore have both points of view. The owner of capital who puts his money into a merchandising business usually expects in return not only the normal rate of interest on his capital but also a further reward in the form of a net profit over and above the interest charges. This distinction be-

[2] On the standard form of profit and loss statement as used by the Harvard Bureau of Business Research, merchandise figures are handled as follows:

To Net Inventory of Merchandise at Beginning of Year; that is, the value of stock on hand after allowances have been made for depreciation and cash discounts taken on that stock, are added Purchases of Merchandise at Billed Cost and Inward Freight, Express, and Cartage. The total of these three items is Gross Cost of Merchandise Handled. After the item Cash Discounts Taken on Purchases has been deducted, the remainder is Net Cost of Merchandise Handled, from which is subtracted Net Inventory of Merchandise at End of Year (this likewise being the value of merchandise on hand after deducting allowances for depreciation and cash discounts taken). The remainder is Cost of Merchandise Sold, which is divided by the average of the two net inventory figures to determine the rate of stock-turn. Possibly the rate of stock-turn might be determined more exactly if gross inventory figures were used, since the element of depreciation may not always apply equally to both sides of the equation.

It has been argued that stock-turn figures obtained under the "retail method of inventory" are slightly more accurate than those obtained under the cost method. Under this method the rate of stock-turn is determined by dividing net sales at retail during the given period by the average net inventory of merchandise at retail during the period. Since the correct application of the "retail method of inventory" requires that all retail figures be kept down to the values that the merchandise actually will bring at retail, conceivably the element of depreciation applies more equally to both sides of the equation than is the case with the cost method. Possibilities of variation may be increased somewhat, however, by the fact that selling price figures include the element of gross profit as well as the element of cost.

Under the "retail method of inventory" the error is to be avoided of adding mark-downs at retail to net sales at retail in order to obtain a figure which when divided by the average net inventory at retail will give the rate of stock-turn. Such a procedure amounts substantially to considering the element of depreciation twice, since the net sales and net inventory at retail figures are already depreciated.

tween return on capital and net profit of a business is not always clearly made, but it is highly useful if a business man is to make sure that he is receiving adequate compensation, in the form of a net profit over and above the return on his capital, for the risks undertaken and the foresight exercised. Investors, stockholders, and owners of capital in general are likely to be interested in the percentage of net profit on investment; and in a retail or wholesale business the percentage of net profit on total investment will, of course, be affected by the percentage of net profit on capital invested in stocks of merchandise. From the point of view of the business manager, however, who charges as an expense of his business interest on his own capital as well as interest on capital borrowed from banks, wholesalers, or manufacturers, the relative efficiency of the business is measured better by percentages based on volume of net sales than by percentages based on either net worth or average investment in stocks of merchandise.

So far as volume of sales and cost of merchandise sold are concerned, it makes little difference for purposes of comparison which is employed so long as all percentages are kept on the same basis, because of the fixed relations existing between percentages on sales and percentages on cost of merchandise, that is

$$\frac{\text{Percentage on Sales}}{\text{(100—Percentage of Gross Profit on Sales)}} = \text{Percentage on Cost}$$

Since it is customary in most progressive businesses to figure all percentages on the basis of volume of net sales, this basis may be preferred to the cost basis. Therefore, in the comparisons that follow, percentages based on the volume of net sales as 100% are used rather than percentages based on cost of merchandise sold, net worth, or average stock investment.[3]

Effect of Rate of Stock-turn upon Expenses and Profits.

For the purpose of making comparisons between firms with high and low rates of stock-turn, the data in the tables which appear on pages 98, 99 and 100 were compiled from profit and loss statements submitted to the Harvard Bureau of Business Research for the years 1919, 1920, and 1921, in the retail shoe, retail jewelry, and wholesale grocery trades. Complete

[3] It may be useful to consider some common confusions that result from failure to define terms clearly and to make all comparisons consistently on the same basis. Aside from the liability of confusion when turnover is loosely used to mean either stock-turn or sales volume, the error frequently is made in popular discussion of attributing to an increased rate of stock-turn results which really are due to an increased volume of sales. The favorite example of this kind of argument is that of the itinerant fruit vendor who purchases a load of fruit and vegetables for $10 and sells it for $15 with a selling expense of $2. If he sells but one load a day he has a rate of stock-turn of once a day. In case he increases his rate of stock-turn to twice a day, he can reinvest the original $10 and sell a second load also. At a stock-turn of once a day his sales are $15, his cost of merchandise sold $10, his gross profit $5, his expense $2, and his net profit $3; but under conditions of two stock-turns a day his sales are $30, his cost of merchandise sold $20, his gross profit $10, and expense $4 (assuming that the ratio of expense to sales remains constant), and his net profit $6. Therefore, he usually is said to have doubled his net profit by doubling his rate of stock-turn. If the dollars and cents figures be disregarded, his percentage of net profit based on volume of sales as 100 per cent has not changed. It is still 20 per cent. It is only in case a comparison is made between net profits and average stock investment that the percentage of net profit is doubled. The average stock investment has remained $10. In the first instance the net profit was 30 per cent of $10, and in the second case it is 60 per cent of $10. Exactly the same result in percentage of net sales would have been obtained if the merchant originally had had $20 to invest and his stock-turn had remained at the rate of once a day instead of twice. Aside from the ambiguity arising from figuring percentages on stock investment and stating on that basis that the net profit has been doubled by doubling the rate of stock-turn, there is the more important point that the increase in volume of net profit is due not so much to the fact that the merchant doubled his rate of stock-turn as to the fact that he doubled his volume of sales by finding a market for twice as much fruit and vegetables as he previously had been selling. (This error in the consideration of stock-turn was brought out by Mr. C. S. Duncan in the *Annalist* for September 19, 1921, page 271, in an article entitled *Stock Turnover—A Deceptive Index.*)

Another set of assertions that needs to be carefully examined rests on the assumption of certain fixed relations among expenses, rate of stock-turn, gross profit, and volume of sales. It is maintained, for instance, that expenses can be divided into two groups, one of which, the fixed charges, will remain unchanged in dollars and cents no matter what the volume of sales so long as that volume is secured by means of increasing the rate of stock-turn and not by an increase in the investment in stock. At the same time it is assumed that all expenses other than fixed charges will vary directly with the volume of sales. On this basis a chart is constructed showing the net profit obtained at different rates of stock-turn and given percentages of gross profit. In the first place it may be doubted whether expenses can be sharply divided into two groups, one varying directly with volume of sales, and the other remaining fixed. There also seem to be obvious limitations on the theory that fixed charges will remain the same, no matter what the volume of sales. A more serious error, however, may be made if fixed relations are taken for granted between the rate of stock-turn and the percentage of gross profit. In several plans for increasing net profits by a faster rate of stock-turn to which some publicity has been given appear such statements as the following: "Eight stock-turns per annum at a gross profit of ten per cent are equivalent to one stock-turn yearly at a gross profit of eighty per cent. Eight stock-turns per annum at a gross profit of 8 per cent are equivalent to one stock-turn yearly at an expense of 64 per cent." In at least one instance it was stated that these percentages were figured on net sales as a basis, but it is obvious on reflection that they are percentages on stock investment. If the percentages really are figured on sales, the relations asserted between stock-turn and gross profit and stock-turn and expense prove meaningless. In this case, by failing to state correctly the basis of comparison used and adhere to it consistently, the door is left open for ambiguous interpretation.

RETAIL SHOE TRADE

	1919			1920			1921		
	Highest Stock-turn Group-15 Firms	All Firms Reporting 197	Lowest Stock-turn Group-15 Firms	Highest Stock-turn Group-15 Firms	All Firms Reporting 397	Lowest Stock-turn Group-15 Firms	Highest Stock-turn Group-15 Firms	All Firms Reporting 407	Lowest Stock-turn Group-15 Firms
	Average Figures	Common Figures	Average Figures	Average Figures	Common Figures	Average Figures	Average Figures	Common Figures	Average Figures
Stock-turn	3.8 times (Range 2.8-5.5)	1.8 times	1.0 times (Range 0.7-1.2)	4.5 times (Range 3.7-7.9)	2.0 times	1.0 times (Range 0.7-1.1)	4.7 times (Range 3.9-7.9)	1.9 times	0.9 times (Range 0.5-1.0)
Net Sales	$349,884		$32,757	$530,804		$138,120	$383,519		$40,928
Wages of Sales force	8.2%	8.8	8.1%	8.3%	10.2%	11.5%	9.2%	10.8%	12.4%
Total Selling	10.8	10.3	9.7	11.7	12.3	14.1	12.8	13.4	13.7
Buying, Management, and Office Salaries	4.5	4.2	3.6	4.1	3.9	5.2	4.8	3.5	4.1
Total Buying and Management	4.8	4.5	3.8	4.5	4.2	5.8	5.5	3.9	4.3
Rent	2.1	2.3	3.1	2.5	2.8	3.5	2.7	3.0	3.2
Total Interest	1.8	2.9	3.9	1.7	3.0	4.5	2.2	3.1	5.8
Total Fixed Charges and Upkeep	5.4	7.4	9.8	5.4	7.6	10.3	7.1	8.5	11.9
Total Expense	22.6	24.0	25.0	23.3	28.0	31.8	26.8	27.8	32.0
Gross Profit	32.0	33.1	35.0	26.8	27.2	32.4	28.1	25.9	30.8
Net Profit (or Loss)	9.4	9.0	10.0	3.5	1.2	0.8	1.3	1.9	1.4

The common figures for all firms reporting are taken from the Harvard Bureau's bulletins for the respective years. The percentage figures given for the high and low sotck-turn groups are arithmetical averages. Such average figures theoretically are not strictly comparable with common figures, but in these cases the discrepancies are too small to be of any importance. The fifteen firms in the high and low groups are not the same for all three years; that is, the firms having the highest and lowest rates of stock-turn each year were selected irrespective of whether they had been in those categories the previous year.

tabulations of reports in these three trades submitted by identical firms for each of the three years was not undertaken, since careful tests indicated that owing to changing business conditions, comparisons between different years for the same firms were not so significant as comparisons between different firms for the same year. For each year in each trade the statements selected were those from the fifteen firms with the highest rates of stock-turn, and the fifteen firms with the lowest rates of stock-turn. Aside from variations appearing from year to year in rapidity of stock-turn, it should be borne in mind that the commonly attained rates of stock-turn in these three trades are quite different. From such data as are available it appears that whereas the average rate of stock-turn in jewelry stores is about once a year, in retail shoe stores it is nearer twice a year, and in wholesale grocery firms it is from five to six times a year.

The item Net Sales in the tables below and on pages 99 and 100 is Gross Sales less merchandise returned by customers and less allowances made to customers on merchandise not returned. So far as this item is concerned, in all cases firms in the high stock-turn group had a larger average volume of net sales than those in the low stock-turn group, the variation being greater in some instances than in others. Differences in volume of net sales from year to year in these tables are due partly to the inclusion of different firms each year in the high and low stock-turn groups, as well as to changes in the general price level and numerous other factors affecting individual businesses.[4]

The association of a high rate of stock-turn with a large volume of net sales does not indicate necessarily the existence of any causal connection. In the bulletins of

Footnote 3 continued from page 90:

Even if stock investment is used consistently as a percentage base, the results may be confusing to merchants accustomed to making comparisons on the basis of net sales as 100 per cent.

Such confusions as these may lead to dangerous assumptions about the expense of selling rapidly moving articles and slowly moving articles. For instance, statements have been made that with an average cost of doing business of 8 per cent, money may be lost on a slowly-turning commodity carrying a gross profit of 20 per cent, and that, on the other hand, with the same average cost of doing business, it is possible to make a net profit on an article bearing only 5 per cent gross profit provided the rate of stock-turn is sufficiently rapid. Conceivably it may be true that in a business where the average cost of operations is 8 per cent of net sales the expense of handling and selling certain articles may be higher than 20 per cent of net sales, and the expense of handling and selling certain other articles lower than 5 per cent of net sales. Nevertheless, for a business which does not have an accurate cost accounting system that will show as exactly as possible the expense of handling and selling merchandise of different classes, it is by no means safe to assume that the expense of selling an article with a low gross profit and a high rate of stock-turn necessarily will be low enough to leave a net profit, especially if the gross profit is lower than the firm's average cost of doing business. The assertion of fixed mathematical relations between stock-turn and gross profit and stock-turn and expenses by no means can take the place of accurate cost accounting.

[4] According to the data of the Harvard Bureau, the most notable change in sales volume from one year to another for the same firms was in the wholesale grocery trade, where 229 identical firms submitting fully comparable statements for both 1920 and 1921 showed a decline of 30 per cent in aggregate volume of net sales in the latter year. In the retail jewelry trade 119 firms furnishing reports for both 1920 and 1921 showed an average falling off in net sales of 15 per cent in 1921.

the Bureau where comparisons have been made between firms in different volume groups this same association between large volume of net sales and a rapid rate of stock-turn appears in a majority of instances.

In all but one case Wages of Salesforce (wages of regular and extra salesforce, commissions, bonuses, and premiums, and part of the salary of proprietor, partner, or manager proportionate to the time spent in selling) was lower in the high stock-turn group than in the low stock-turn group. The one exception was in the retail shoe trade in 1919. In some instances, however, the common figure for all stores reporting was lower than the average for either the high or the low stock-turn group. In the shoe and jewelry trades the difference betwen the average percentages for this item in the high and low stock-turn groups was greater in 1920 and 1921 than in 1919. In the wholesale grocery business the greatest difference was in 1921, the discrepancy in 1919 being greater than that in 1920. Although there was some tendency for a low percentage of salesforce expense to accompany a rapid rate of stock-turn, the fact that the greatest differences were in the wholesale grocery and retail jewelry trades in 1921, where the average falling off in net sales volume was conspicuous, suggests that a low percentage of salesforce expense may be related fully as closely to a large volume of net sales as to a rapid rate of stock-turn.

Total Selling expense (which includes advertising, boxes, wrappings, and other selling expense, in addition to wages of salesforce) showed practically the same tendencies as Wages of Salesforce, except that in 1919 in the retail shoe and jewelry trades the fifteen firms with the lowest rates of stock-turn showed lower total selling expense than the fifteen firms with the highest rates of stock-turn.

In 1919 and 1920 in the retail jewelry trade the high stock-turn groups showed higher Buying, Management, and Office Salaries (including part of salary of proprietor, partner, or manager proportionate to time devoted to buying merchandise and to managing the business) than the low stock-turn groups, and the same was true in the retail shoe trade in 1919 and 1921. In 1921 in jewelry, 1920 in shoes, and all three years in the wholesale grocery business, the high stock-turn groups had lower average percentage figures for this item than the low stock-turn groups. Again, in some instances the common figure for all stores reporting was lower than the figure appearing in either stock-turn group. The evidence here is conflicting. It might be reasoned, of course, that more expensive management was necessary to se-

RETAIL JEWELRY TRADE

	1919			1920			1921		
	Highest Stock-turn Group-15 Firms	All Firms Reporting 100	Lowest Stock-turn Group-15 Firms	Highest Stock-turn Group-15 Firms	All Firms Reporting 182	Lowest Stock-turn Group-15 Firms	Highest Stock-turn Group-15 Firms	All Firms Reporting 190	Lowest Stock-turn Group-15 Firms
	Average Figures	Common Figures	Average Figures	Average Figures	Common Figures	Average Figures	Average Figures	Common Figures	Average Figures
Stock-turn	1.8 times (Range 1.3-4.8)	1.1 times	0.6 times (Range 0.3-0.8)	2.0 times (Range 1.7-3.0)	0.9 times	0.8 times (Range 0.3-0.7)	1.8 times (Range 1.5-2.8)	0.8 times	0.4 times (Range 0.2-0.6)
Net Sales	$205,066		$136,484	$106,800	9.8%	$96,419	$79,324		$25,694
Wages of Sales force	8.3%	8.5%	8.4%	8.0%		12.1%	11.0%	12.8%	17.3%
Total Selling	11.9	11.8	11.7	11.9	13.0	15.8	14.8	16.8	21.7
Buying, Management, and Office Salaries	5.4	4.9	4.7	6.1	4.9	5.1	6.3	5.2	7.4
Total Buying and Management	6.0	5.8	5.3	8.7	5.9	5.8	7.4	7.0	8.3
Rent	3.9	4.9	4.4	3.4	3.9	4.5	3.8	5.4	6.3
Total Interest	3.5	4.8	7.2	4.1	5.1	8.8	3.6	7.9	11.7
Total Fixed Charges and Upkeep	8.7	11.6	15.3	10.3	11.8	16.8	9.8	18.8	25.8
Total Expense	30.4	32.3	34.3	30.7	32.7	40.0	34.2	43.5	56.1
Gross Profit	37.1	40.1	41.9	32.9	39.1	43.7	33.8	36.9	46.2
Net Profit (or Loss)	6.7	7.8	7.8	2.2	6.4	3.7	0.4	6.6	11.9

WHOLESALE GROCERY TRADE

	1919			1920			1921		
	Highest Stock-turn Group-15 Firms	All Firms Reporting 159	Lowest Stock-turn Group-15 Firms	Highest Stock-turn Group-15 Firms	All Firms Reporting 322	Lowest Stock-turn Group-15 Firms	Highest Stock-turn Group-15 Firms	All Firms Reporting 344	Lowest Stock-turn Group-15 Firms
	Average Figures	Common Figures	Average Figures	Average Figures	Common Figures	Average Figures	Average Figures	Common Figures	Average Figures
Stock-turn	9.3 times (Range 7.4-14.8)	5.2 times	3.8 times (Range 2.6-4.4)	11.2 times (Range 9.0-15.8)	6.1 times	3.8 times (Range 2.5-4.1)	11.2 times (Range 9.0-14.4)	5.0 times	2.7 times (Range 2.1-3)
Net Sales	$3,399,336		$1,436,856	$2,809,479		$1,313,920	$1,083,191		$741,125
Wages of Sales force *	2.2%	2.2%	2.6%	2.2%	2.1%	2.3%	2.2%	2.7%	3.1%
Total Selling	2.4	2.4	2.7	2.4	2.2	2.5	2.3	2.9	3.3
Buying, Management, and Office Salaries	1.8	1.5	2.0	1.7	1.7	1.8	2.1	2.1	2.3
Total Buying and Management	2.2	2.0	2.4	2.3	2.1	2.1	2.5	2.8	2.8
Rent	0.3	0.3	0.5	0.3	0.3	0.4	0.5	0.5	0.9
Total Interest	1.0	1.8	1.8	1.3	1.8	2.9	1.1	1.9	2.9
Total Fixed Charges and Upkeep	1.9	2.8	3.1	2.1	2.7	3.3	2.2	3.3	5.6
Total Expense	8.8	9.1	10.8	8.8	9.0	10.3	9.8	11.5	14.0
Gross Profit	10.5	11.1	11.8	9.2	8.5	10.3	10.1	9.8	7.7
Net Profit (or Loss)	1.7	1.9	1.2	0.4	0.5	0.0	0.5	1.9	6.9

*Includes Traveling Expenses of Sales force

cure a rapid rate of stock-turn, but the data fails to lend much support to this argument. It may be of some importance that Harvard Bureau comparisons of expense percentages between stores grouped according to volume of net sales have indicated a tendency for high percentages of management expense to accompany large sales volume.

Total Buying and Management expense (which includes office supplies, postage, traveling, and other management, in addition to salaries) showed practically the same variations in the above tables as Buying, Management, and Office Salaries, except that in the wholesale grocery business in 1920 Total Buying and Management was higher in the high stock-turn group than in the low stock-turn group.

Rent includes rent of buildings used for operations, whether owned or leased, and also any storage fees incurred for the use of outside space. In all cases the high stock-turn groups showed lower average rent percentages than the low stock-turn groups. In the jewelry and wholesale grocery trades the greatest difference appeared in 1921.[5]

Total Interest includes both interest on capital-borrowed and interest on the net investment in the business exclusive of real estate. In all instances the high stock-turn groups had a lower average percentage of total interest expense than the low stock-turn groups, the largest difference in all three trades appearing in 1921.

Total Fixed Charges includes, in addition to Rent and Total Interest, the expenses for heat, light, and power; taxes (except on income and excess profits); insurance (except on buildings); repairs of store equipment; and depreciation of store equipment. In each year in each trade for this item a lower average percentage figure appeared in the high stock-turn group than in the low stock-turn group, greater variations being exhibited in 1920 and 1921 than in 1919.

Total Expense is made up of Total Selling, Delivery, Total Buying and Management, Total Fixed Charges and Upkeep, Miscellaneous Expense, and Losses from Bad Debts. In each case this item was lower in the high stock-turn groups than in the low stock-turn groups.

In all but one instance the average percentage of Gross Profit (the difference be-

[5] Contradictory evidence in regard to Rent appears in the following table on operating expenses in department stores in 1921 according to the rate of stock-turn. Here the highest rent expense appears in the high stock-turn group.

OPERATING EXPENSES IN DEPARTMENT STORES IN 1921 ACCORDING TO RATE OF STOCK-TURN.
Net Sales-100%.

	Stock-turn less than 2.5 times	2.5—3.4 times	3.5 times and over
Number of Firms..	95	94	111
Salaries and Wages..	16.2%	15.4%	14.7%
Rentals	2.3	2.4	2.5
Advertising	2.2	2.4	2.5
Interest	3.0	2.2	1.8
Total Expense.....	28.5	27.9	27.1

(Bureau of Business Research, Harvard University, Bulletin No. 35, *Operating Expenses in Department Stores in 1921.*)

tween net sales and cost of merchandise sold) was lower in the high stock-turn groups than in the low stock-turn groups. The one exception was in the wholesale grocery trade in 1921, where the average gross profit in the fifteen firms with the highest rates of stock-turn was 10.1% of net sales as compared with 7.7% in the fifteen firms with the lowest rates of stock-turn. This exception probably reflects the situation of rapidly declining prices which the wholesale grocery business faced in 1921. It also may be taken to indicate the desirability of a rapid rate of stock-turn on a falling market in order to avoid the necessity of large markdowns. In some other instances, particularly in 1919, the higher average percentages of gross profit achieved by firms in the low stock-turn groups probably indicate that these merchants through speculative buying profited because of appreciating values. The higher average expense percentages shown by the low stock-turn groups of course necessitated higher average gross profit precentages if any net profit was to be shown. In this connection it is interesting to consider how far customary retail prices enable retailers with low rates of stock-turn to cover their higher operating expenses by higher percentages of gross profit. Certainly the exception in the case of wholesale grocers in 1921 reflects severe competition and rapid decline in prices. The common Gross Profit figure for all firms reporting was lower than the average figures for either stock-turn group in retail shoe stores in 1921 and wholesale grocery establishments in 1920.

The average percentages of Net Profit (gross profit less total expense) in jewelry stores in 1919 and 1920 were lower in the high stock-turn groups than in the low stock-turn groups. This showing, however, was due wholly to the higher percentages of gross profit achieved by the firms in the low stock-turn groups, since in each year the average total expense percentage in the low stock-turn group was higher than that in the high stock-turn group. In 1921, in spite of the fact that gross profit in the low stock-turn group was higher than that in the high stock-turn group and also higher than that in the low stock-turn group for the preceding year, the total expense percentage in this group was so much higher than that in the high group that there was an average net loss of 11.9% of net sales in the low stock-turn group as compared with an average loss of 0.4% of net sales in the high stock-turn group. In the retail shoe trade in 1919 average net profit in the high stock-turn group was lower than in the low stock-turn group, but in both 1920 and 1921 better showings were made in the high stock-turn groups than in the low, the reasons for these variations being apparently the same as in the case of jewelry. In all three years in the wholesale grocery trade better average net profit percentages were achieved by the high stock-turn groups than by the low stock-turn groups. It is to be noted that the relations between gross profits and total expenses were such that the common net profit figures for all firms reporting were lower than the average figures for that item in either stock-turn group in retail shoe stores in 1919, but higher in the wholesale grocery business in 1919 and higher in retail jewelry stores in 1920. Also, a common net loss was shown by all firms reporting in the wholesale grocery trade for 1920 as contrasted with 0.4% net profit in the high stock-turn group and neither profit nor loss in the low stock-turn group. Furthermore, the common net loss for all shoe stores reporting for 1921 was larger than the average net loss in the low stock-turn group, the high stock-turn group having made a small profit. These results do not strengthen the value of gross and net profit figures as standards by which to judge the effects of different rates of stock-turn.

Conclusion

It appears then that a rapid rate of stock-turn is likely to be accompanied by a

larger volume of net sales and lower percentages of selling expense, fixed charges, total expense, and gross profit (except possibly under conditions of severe competition on a rapidly declining market) than are found with a slow rate of stock-turn. Whether higher or lower management expenses are to be expected with a fast turnover of merchandise is a point that is not clear. As regards net profit, it is not apparent that stores with a high rate of stock-turn invariably make a better showing than stores that turn their stock more slowly. In fact quite the reverse may be true in a rising market. Nevertheless, it is indicated that a rapid stock-turn rate in a falling market may accompany a readjustment of operating expenses to net sales that results in a better net profit showing. It should be borne in mind, however, that a high stock-turn figure during a period of falling prices may indicate merely a high degree of inventory depreciation, close adherence to a policy of hand-to-mouth buying, or even a serious depletion of inventories.

Mere volume of sales is not a criterion of an efficiently conducted business; neither is the percentage of gross profit, and the same is true of net profit so far as it depends on gross profit. The surest test lies in the ratio of expense to sales. Rapidity of stock-turn is thus chiefly significant as accompanying a relatively low percentage of total expense.

The association of a rapid rate of stock-turn with a relatively large volume of sales in no way proves that either is the cause of the other; both may be due primarily to good management. Theoretically, a speedier turnover of merchandise might be supposed to bring about a larger volume of net sales because of less depreciation and fewer mark-downs, but the factors affecting different firms during the same year or the same firms during different years are so numerous and complex that proof of this theory is difficult. Also, though a greater number of stock-turns during a period apparently permits a lower percentage of gross profit, competitive conditions may operate to prevent this result, and the immediate cause in any case is lower operating expenses. Likewise the effects of the rate of stock-turn on the percentage of net profit are similarly indirect, this item being determined by the relation between gross profit and total expense. It remains to consider how far a rapid rate of stock-turn is directly responsible for a relatively low total expense percentage.

Although a lower percentage of selling expense apparently tends to be associated with a rapid turnover of merchandise, it is difficult to prove a direct connection. It seems likely that a large volume of sales permits a more effective utilization of salesforce and therefore is more directly responsible for a lower percentage of salesforce expense than a rapid rate of stock-turn. In the case of buying and management expense, low percentage figures seemingly are not always found associated with a rapid rate of stock-turn, and the possibility of establishing a direct connection probably is even more remote than in the case of selling expense. There remain the items of fixed charges and upkeep expense. As regards rent, in spite of the exception noted in the case of department stores, there is at least a proba bility that in the long run a relatively lov percentage of rent expense usually accom panies a rapid rate of merchandise turn over. Since the size of the average physical inventory bears some relation to rent expense, the rate of stock-turn, even when measured in terms of value rather than by physical units, presumably has some direct effect on this item. The most direct results, however, are in the case of interest expense, because interest on the average inventory of merchandise usually constitutes a material part of the total interest charge on the net worth of the business. There is also a direct relation between the value of the inventory and such expense items as taxes and insurance on merchandise. Whether volume of sales remains

the same or increases, a faster rate of merchandise turnover reduces the ratio of the average inventory to sales and makes any expense that is governed directly by size of inventory a smaller percentage of net sales.

Although the rate of stock-turn thus directly affects the percentage of total fixed charges and upkeep expense, it does not follow that a policy of increasing the rapidity of stock-turn can be followed without any limitations. In the first place the desire to achieve a rapid rate of stock-turn should not be permitted to interfere with careful buying; that is, a saving in expenses that might be achieved through increasing the rate of stock-turn must sometimes be balanced against the higher cost of merchandise purchased in smaller quantities. Furthermore, a merchant cannot pin his faith so exclusively to stock-turn that he neglects to maintain an ample range of selection in the merchandise carried. Frequently, also, a store must have seasonal goods, popular style merchandise, or other goods demanded by its clientele, even though these sometimes interfere with planned stocks or planned rates of stock-turn. And certainly a rapid rate of stock-turn cannot take the place of an accurate knowledge of costs and a corresponding adjustment of the margin of gross profit.

The effect of stock-turn on fixed charges alone usually is not great enough to account entirely for the lower total expense percentage that ordinarily accompanies a rapid rate of stock-turn. It is therefore indicated that a rapid rate of stock-turn is more significant as an index of all-round efficient management leading to lower expenses than as a factor that will in itself produce lower expenses and higher profits.

SUMMARIES OF BUSINESS RESEARCH

1. TERM SETTLEMENTS FOR THE NEW YORK STOCK EXCHANGE

A Discussion of the Effects of Term Settlements in Place of Daily Settlement of Transactions on the New York Stock Exchange

IT has always been the practise to settle all sales and purchases of securities on the New York Stock Exchange within 24 hours of their actual occurrence. The general rule on all the major European exchanges, however, is to have certain definite periods of time between settlements, these periods varying anywhere from one week to a month.

To point out the fundamental principles governing a periodical clearing of securities without going into technical details is the purpose of this note. First, let it be said that such a scheme is feasible in New York, for the Stock Clearing Corporation has now reached such a degree of efficiency that without serious disruption it is capable of taking the forward step and of adopting a term settlement plan. In fact, that organization has already commenced a study of the problem.

To make Stock Exchange transactions virtually contracts for future delivery stands out as the fundamental principle of any scheme for periodical settlements; because sales of securities will require no passing of cash or delivery until the next settlement day. The present methods will be altered only in regard to the time of delivery. Members of the Exchange will buy and sell securities as they have always done, deferring the settlement of their contracts and the making of deliveries until specified clearing days.

Since each broker will keep his books on a weekly or fortnightly rather than on a daily basis, one of the direct results of such a scheme must be to increase the number of transactions carried on the brokers' books. By offsetting one against another, these entries of purchase and sale should tend to balance more evenly in the long run, thereby utilizing the minimum amount of ready money and also economizing in the actual passing of securities from hand to hand.

Because cash will no longer be necessary for purchases of securities, it will follow that the practise of lending money "on call" must be materially altered. The money requirements of the Exchange should therefore be reduced to that smaller amount needed for margins by brokers and for carry-overs of contracts from one settlement day to the next. Such a plan should, it appears, place the Stock Exchange on a basis comparable to the Cotton Exchanges and the Chicago Board of Trade, where cotton and grain are sold for future delivery and where sales are offset against purchases so that only the differences in price are settled with cash.

To comprehend the final effects of this proposal, however, one must trace the indirect as well as the direct results. The practise of carrying a large portion of the country's "secondary" bank reserves in "call loans" in New York, where the collateral consists of Stock Exchange securities, presents certain marked defects. In times of monetary ease and rising security prices, any individual bank can without difficulty call in its loans made to the Stock Exchange. On the other hand, in times of stress when many banks have need to convert their "secondary" re-

serves into cash, there arises a serious difficulty; a general withdrawal of funds at such a time from the Stock Exchange gives rise to a selling movement with a consequent decline in security prices such that the collateral behind these "call loans" shrinks rapidly in value. When this calling in of funds by the banks is extensive, the result is a severe decline in security prices, often with an ensuing panic.

The adoption of the Federal Reserve System did much to remedy this defect in that it made possible the rediscounting by member banks of their assets with the Federal Reserve Banks. Today a member bank can, by going to the Reserve Bank, turn "secondary" reserves into cash within three hours, provided those reserves consist of short-time obligations arising out of commercial transactions. Such a system results in elastic banking reserves, for under it there is in times of stress an ultimate means of raising cash. The large part played by the "call loan," however, continues to jeopardize this new elasticity brought into existence by the Federal Reserve, for it must be remembered that "secondary" reserves carried in Stock Exchange loans are ineligible for rediscount.

There exists today a bad case of action and reaction between collateral loan rates and security prices. Should the New York Stock Exchange adopt a term settlement plan, it is obvious that the money requirements of its members will be so reduced that the practise of lending banks' surplus funds "on call" in New York will become less important. It is probable that the money requirements for stock transaction settlements will be reduced to a position of minor significance, as is the case in London, where fortnightly settlements prevail. If this be the outcome, the banks will carry practically all their "secondary" reserves in obligations arising out of commercial transactions. On account of their eligibility for rediscount, reserves so carried will comply with all that is desired on the score of elasticity.

Although several objections have been made to this proposed change, none appear to present any serious obstacles. It is claimed that with a term settlement the broker has less opportunity to cover or to sell out in case of an unexpected rise or fall in prices. This need not necessarily hold, for a broker can change his position just as well under a system of fortnightly as under one of daily clearings. He either buys to cover or sells to "get from under." The date on which deliveries and payments are made cannot alter the case.

Since a selling or purchasing operation when extended over a weekly or fortnightly period might find brokers with exceedingly large commitments, it is reasonable to doubt whether all brokers could muster the necessary credit to pass through such a strain. This difficulty, however, concerns the technical details of the plan, and let it be said that in London, where there are many more exchange members than in New York, this obstruction has been overcome.

The most popular objection to the proposal appears to be fear on the part of brokers of leaving contracts for purchase and sale unprotected for the period of the settlement. Present practise reduces the weight of this argument. For since oral contracts, often made by a mere sign of the hand, are accepted on the Exchange, it is not reasonable to fear any great danger from the extension of the contract period. Whether the clearing takes place once a day or once a week or fortnight, there can exist the same method of procedure and the same legal protection by the use of "tickets" in either case. This objection could also be overcome by demanding a deposit of funds by the brokers with the Stock Clearing Corporation similar to the margin required in Paris from all exchange members trading for the term settlement, or by daily clearings, wherein contracts would be marked down to closing prices each day, but where the final settlement would be deferred to the weekly or fortnightly period.

Finally it should be said that, since the term settlement would materially reduce the money requirements of the Stock Exchange and do away with the extensive practise of carrying the banks' "secondary" reserves in "call loans," it should tend to make the members of the Stock Exchange freer agents and less dependent upon the willingness of the banks to lend their surplus funds.

2. BANK INVESTMENTS

A Study of the Investment Policy of Commercial Banks with Special Reference to Bankers' Acceptances and United States Certificates of Indebtedness

THE development of a broad open market for Bankers' Acceptances and United States Treasury Certificates of Indebtedness has become an important feature in the evolution of American financial machinery during the last few years. As a direct consequence, there have arisen some interesting questions in regard to Bankers' Acceptances and Certificates of Indebtedness as short time investments for commercial banks.

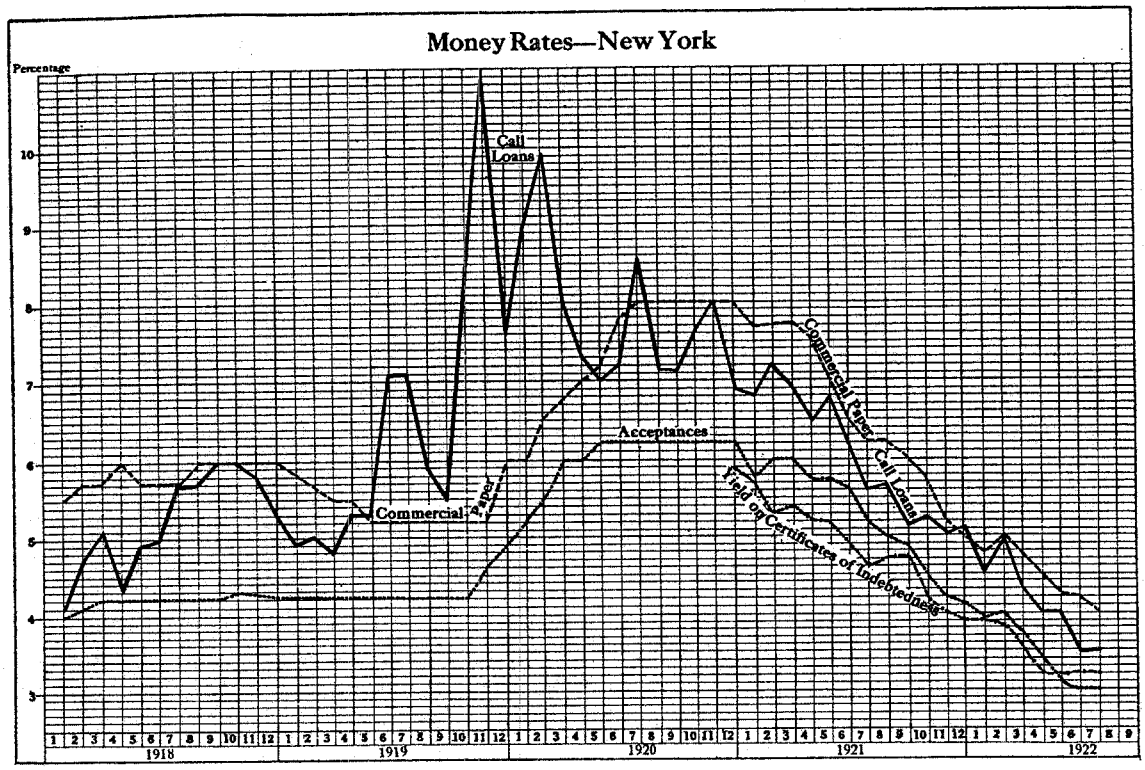
Before the establishment of the Federal Reserve System, a great many banks kept a certain portion of their funds on the call money market in the large cities, particularly New York, and regarded these loans as their secondary reserves to be liquidated when their primary cash reserves were in danger of depletion below the statutory requirement. The liquidation of these loans proved most difficult at the times when it was most necessary. With the Federal Reserve Banks in operation it is no longer necessary for a bank to maintain a secondary reserve in the form of call loans, because it can convert into cash at once any portion of its portfolio of eligible commercial paper by rediscounting it at a Federal Reserve Bank. Despite this fact, however, a very large number of banks outside of New York City continue the practise of lending surplus funds on call in New York rather than purchasing commercial paper, Bankers' Acceptances or Certificates of Indebtedness.

One strong reason for this is the fact that bankers all over the country are thoroughly familiar with the call loan whereas the Bankers' Acceptance and the Certificate of Indebtedness are newer to them. A second important explanation may be found in the fact that the call money market frequently offers more attractive rates than can be obtained on Acceptances or Certificates. This is illustrated in the chart on page 101.

An important apparent advantage of the "participation call loan" over commercial paper as a secondary reserve is the fact that the participating bank feels more confident of the security.[1] Regardless of the fact that losses on commercial paper have been surprisingly small during the last two and one-half years, the risk of a piece of paper is subject to more incommensurable influences and requires more detailed checking than does a participation call loan based on active securities listed on some exchange and placed through some experienced correspondent. The maintaining of a proper margin is looked after by the city correspondent, and the loan requires almost no attention.

The call loan, furthermore, can produce funds in New York on the same day it is called (if it is called in the morning) and does not have to be sent on to New York for sale, as is often the case with commercial paper, Acceptances and Cer-

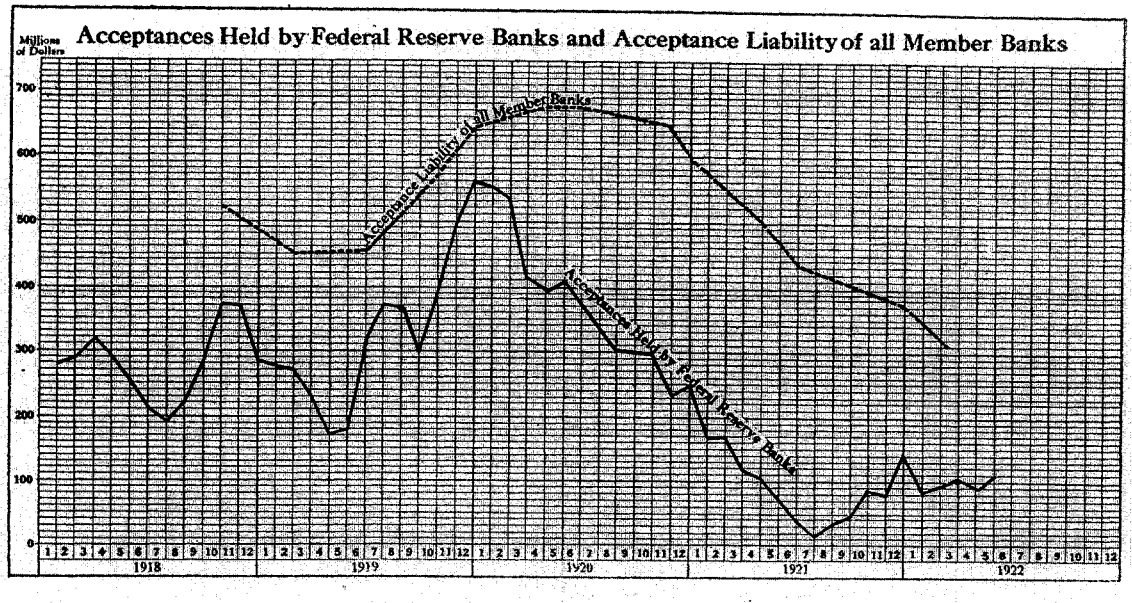
[1] It may be pointed out here that in speaking of commercial paper we refer to paper of borrowing concerns which is floated through commercial paper houses and sold to anyone who wishes to invest in such an instrument. We do not refer to the paper which a bank may discount for one of its customers and which is, in many cases, subject to renewal if it is inconvenient for the borrower to take it up at maturity. Like a Bankers' Acceptance, commercial paper of the former variety is an unconditional obligation of the borrower which is purchased because the lender wishes an investment of the payment of which at maturity he can be perfectly sure. Purchasers of commercial paper, as we have used the term, do not wish requests for renewals and do not receive them except in cases of financial emergency.



tificates. This difficulty, however, can be overcome by allowing a city correspondent to hold for an out-of-town bank any paper, Acceptances or Certificates which the latter may have occasion to liquidate. If this expedient is adopted, there is a slight advantage to commercial paper, Acceptances and Certificates inasmuch as they may be sold to or rediscounted with the local Federal Reserve Bank and thereby produce Federal Reserve funds one day earlier than in the case of call loans which are paid by a one-day check on a commercial bank.

One further advantage of the call loan over commercial paper is the fact that no endorsement is necessary to realize upon the former. In rediscounting commercial paper at the Federal Reserve Bank, a member must ordinarily endorse the paper and thereby create a contingent liability to that amount. Some of the Federal Reserve Banks (notably the Federal Reserve Bank of New York), however, do not require further names when purchasing a Bankers' Acceptance already bearing "satisfactory banking endorsement." This "satisfactory banking endorsement" may or may not be that of a member.

On the other hand, the yield on call loans fluctuates from day to day and is not predictable. It is likewise true that the interest yield is higher apparently than it is in reality. A city correspondent will not undertake the work of making and protecting brokers' call loans for out-of-town correspondents without some sort of compensation. This may take the form of the use of a substantial balance at a low rate of interest, say 2%, or a direct commission charge on the yield of the loan. If the former method is used the balance required by the city correspondent will ordinarily be larger when it is asked to make call loans for the account of its out-of-town correspondent than when it is not asked to do so. The loss of interest on this larger balance should be a proper deduction from the net interest earned on



call loans, and no doubt would reduce such earnings, over a considerable period, to more nearly the level which could be secured on commercial paper.

The call loan, furthermore, places the lender in a position of dependence on the city correspondent. He cannot conduct his transactions himself as he wishes.

The most important consideration in judging what is a suitable secondary reserve for a commercial bank is the liquidity of the proposed investment. The liquidity of the stock exchange call loan is dependent on the ability of the borrowers to shift their loans to other banks. Failing this, the collateral back of such loans must be sold at market without the assurance of adequate purchasing demand. The sacrifice of values and the difficulty of calling loans under such circumstances are too well known to require further comment.

Eligible commercial paper of a member bank, however, may be rediscounted at the Federal Reserve Banks. Until recently the rediscount rate has been below the purchase rate on such paper, and its rediscount therefore has required no sacrifice.[2] To be eligible for rediscount, however, commercial paper (except for agricultural and live stock purposes) must have a maturity of 90 days or less. Unless, therefore, a banker has commercial notes in his portfolio which come within the 90-day requirement, the investment can hardly be considered sufficiently liquid for a secondary reserve because there is no certain market prepared to absorb large amounts of 3-6 months commercial paper at all times and at a fair rate. Commercial paper once purchased does not ordinarily come upon the market again before maturity. As a result there is no considerable floating supply of paper which has been carried to within 90 days of maturity and is suitable, therefore, for investment of short time funds as a secondary reserve. It is true, of course, that a bank can create its own secondary reserve in the form of carefully selected commercial paper by buying prime notes with successive maturities. It can maintain in its portfolio, therefore, any required amount of commercial paper with a maturity less than 90 days which is eligible for rediscount at the Federal Reserve Bank. Such a portfolio of maturing paper forms a highly satisfactory secondary reserve be-

[2] In late April, 1922, the market rate on prime commercial paper fell below the 4½% rediscount rate of the New York Federal Reserve Bank and remained so until the latter rate was reduced to 4% on June 22, 1922, at which date the rates were practically coincident.

cause, besides satisfying the requirements of liquidity, its yield is considerably higher than that obtainable on Acceptances and Certificates of Indebtedness. In considering the advantages of the various types of investments for a secondary reserve, however, we are in general speaking of the investment as a secondary reserve from the time it is purchased until maturity. Three to six months commercial paper when it is first purchased lacks the required liquidity until it becomes eligible for rediscount at the Federal Reserve Bank.

With Bankers' Acceptances the case is somewhat different. For acceptances there is developing an active broad open market, which is prepared to take up at all times substantial quantities of bills without appreciable effect on the rates. For the past eight years banks have been encouraged to open acceptance credits and make bills, the number of dealers has been increasing and educational information about Bankers' Acceptances has been widely circulated. In the development of the Acceptance market the Federal Reserve Banks have played an important and perhaps dominant, part. They have followed the practise of buying at or slightly above market rates large quantities of acceptances, particularly when the supply of bills was large and the demand sluggish. Their purchases, however, have been limited to endorsed bills.

In order to support the volume of business which they transact, dealers in acceptances are required to carry large portfolios of bills relative to their capital. Furthermore, the margin of profit is small and a rapid turnover is necessary if any profit is to be made. It is obvious, therefore, that dealers must be able to secure large loans to carry their bills and that these loans must be at rates approximately the same as the discount basis on which the Acceptances are purchased; for if the rates are higher, the dealer's profit is consumed in carrying his bills. In the early developmental period of the Acceptance market, dealers secured their funds largely from their own banks in the usual way. As the volume of Acceptance business increased, however, competition became keener and the margin of profit was reduced to a minimum. Furthermore, dealers were unable to secure all the necessary funds from their own banks. The result of this need for additional accommodation and the further fact that acceptances constitute a gilt-edge collateral was the development in New York of a call money market, as well as an "over-counter" time money market, against Acceptances as collateral. Because the volume of such funds available for lending against Acceptances fluctuated from day to day and month to month far more than the demand for accommodation, the Federal Reserve Bank of New York instituted the practise in 1919 of purchasing from bill dealers under a 15-day repurchase agreement any bills which the dealers were unable to carry at reasonable rates in the outside market. The rate at which such purchases are made averages approximately the buying rate on Acceptances at the time. This policy was also adopted by the Federal Reserve Banks of Boston and Chicago. The result of this policy on the part of the Federal Reserve Banks has been further to increase the volume of money in the outside market seeking employment against Acceptances and to place the Federal Reserve Banks in the position of shock absorbers prepared to take care of bill dealers should the outside market contract.

The developments of the money market as described above have made it possible for the dealers in Acceptances to buy all the satisfactory bills offered to them without any sudden increase in the rates. This is the most essential condition for a broad Acceptance market.

As a matter of fact the knowledge among banks and dealers that the Federal Reserve Banks will purchase considerable quantities of Acceptances both under repurchase agreements and for their own accounts, rather than the actual purchases

of such Acceptances by the Federal Reserve Banks, has come to be the more important influence looking toward the creation of a broad and liquid market. The chart on page 102 shows the holdings of Bankers' Acceptances by the 12 Federal Reserve Banks and the acceptance liability of all member banks. From this it is evident that it has been necessary for the Federal Reserve Banks to absorb an increasingly smaller proportion of the outstanding Acceptances in order to maintain a broad market.

Some of the Federal Reserve Banks, furthermore, have facilitated the distribution of Acceptances to a certain extent by purchasing endorsed bills for the accounts of out-of-town member banks, holding them and disposing of them if their sale is desired, or collecting them at maturity. A sale by the out-of-town member to the Federal Reserve Bank has the advantage, as pointed out above, of producing Federal Reserve funds on the day of sale. A sale to a broker would produce a one-day check.

A further interesting possibility should at least be mentioned. It is possible that the New York Stock Exchange may establish some sort of term settlement plan at some time in the future. The matter is being studied, much interest has been aroused, and favorable reports are current. If some such plan be adopted, it is fair to assume that the demand for stock exchange call loans will be very considerably reduced, perhaps as much as 80% to 90%. In such an event, the New York banks will be perfectly able to carry all the call loans required. As a liquid investment, furthermore, the call loan will become even more unsatisfactory than it is under the existing system of daily clearings.

The case for the short-time Treasury Certificate of Indebtedness is not essentially different from that of the Bankers' Acceptance. It has the same sort of broad market and is dealt in by the same sort of dealers.[a] Although the Federal Reserve Banks do not attempt to support the market on these Certificates as they do on Bankers' Acceptances, they have been large purchasers of the former. Apparently the yield on Certificates has been about the same as that on Bankers' Acceptances, but actually it has been higher, when the tax exempt features of the Certificate are taken into consideration. The position of the Certificates in the market, however, is more temporary than that of the Bankers' Acceptance. There are outstanding at this time (August, 1922) about $1,495,366,000 Certificates of Indebtedness with maturities of less than a year, which, together with the remaining $1,000,000,000 of 4¾% Victory Notes, constitute nearly two and one-half billions of Government debt with a maturity of less than a year. We have already seen some indications which make it seem probable that when the market becomes more advantageous, the Treasury will fund a large portion of these obligations into a somewhat longer term bond. If this occurs, it will deprive the money market of at least the majority of Government obligations with a maturity short enough to make them suitable as investments for the secondary reserves of commercial banks.

Ratio of United States Treasury Certificates of Indebtedness to Total Loans, Discounts and Investments.

800 Leading Member Banks.

Month (Last Report)	1918	1919	1920	1921	1922
January		10.9%	4.8%	1.5%	1.6 %
February		9.7%	4.0%	1.5%	.97%
March	9.3%	13.4%	2.9%	1.5%	.89%
April	12.5%	14.8%	3.6%	1.5%	1.1 %
May	8.4%	11.9%	3.6%	1.2%	.82%
June	5.0%	6.4%	2.5%	1.4%	1.8 %
July	6.2%	7.7%	2.6%	1.4%	1.7 %
August	7.3%	7.7%	2.5%	1.1%	
September	10.9%	6.9%	1.9%	1.1%	
October	6.4%	5.8%	1.7%	1.5%	
November	5.3%	5.3%	1.9%	1.3%	
December	7.0%	5.1%	1.6%	1.5%	

When the above factors are considered it seems evident that as a direct purchase the Bankers' Acceptance is the most satisfactory investment for the secondary reserve of a commercial bank. The market for Acceptances is becoming broader,

[a] It is enlightening to note the decrease in the proportion of the Certificates held by the 800 leading member banks in relation to the Total Loans, Discounts and Investments of these banks. The table above represents this on a percentage basis.

and broader, while that for call loans is becoming of less importance and that for Certificates of Indebtedness is probably relatively temporary even though excellent at the moment. With the development in the use of dollar credits abroad, furthermore, the Bankers' Acceptance will tend to increase in importance as an international instrument. This will eventually create a highly elastic market for dollar bills, similar to that created for the sterling bill in London.

As pointed out, eligible commercial paper carried to within 90 days of maturity has become very liquid and yields besides a somewhat higher rate than Bankers' Acceptances. It must, however, be carried to within the eligible period before it can be considered as a satisfactory investment for the secondary reserve of a commercial bank; and even the most carefully selected paper can hardly be considered as secure as endorsed Bankers' Acceptances, bearing the names of two nationally known banks.

It should, perhaps, be pointed out that at certain times in the business cycle, notably when money rates are falling and the security market is partly on that account experiencing an upward movement, long time Government bonds as well as certain gilt-edge corporation bonds form a very attractive investment for the surplus funds which commercial banks ordinarily find available at that time. At such times, the chances for appreciation are excellent and the market is very liquid for such bonds.

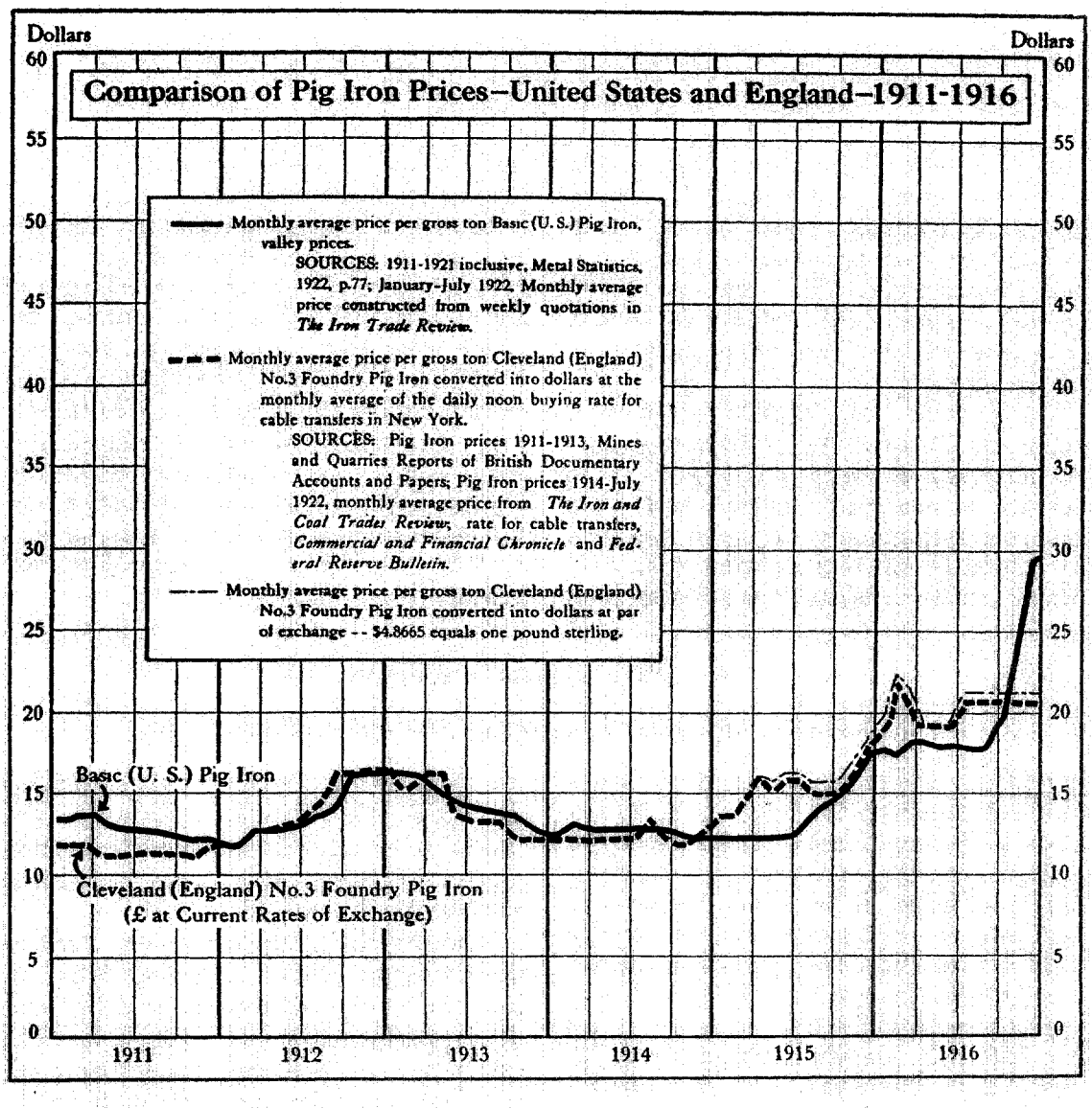
3. PIG IRON PRICES

A Comparison of English and American Pig Iron Prices from 1914 to 1922

UNTIL December, 1914, there was a close correlation between the fluctuations of prices of selected grades of pig iron in the United States and England. Then, as might be expected, the price of pig iron in England advanced steadily until it was checked by governmental control of prices in April, 1916. The price of pig iron in the United States, however, did not reflect the war-time demand until August, 1915, or one year after the outbreak of the war. The advance was more marked than in England and in 1917, when the United States entered the war, the price advanced in five months from $30 to over $53 per gross ton. In September of the same year, the United States war control price on basic pig iron went into effect at $33, a figure approximately $12 above the war control price in England. When government control was removed in both countries in 1919, the disparity in the prices of pig iron became more pronounced. If the trend of the prices of these two grades of pig iron is typical of the price movements of other commodities, as is probable, it is obvious that there can be little certainty in the course of foreign commerce until something more nearly approaching the pre-war relationship is obtained.

The accompanying charts were made to determine the relative course of prices of pig iron in the United States and England during normal times and to show to what extent the war, with its accompanying effects both upon demand and supply conditions and upon the purchasing power of currencies in which prices were quoted, disrupted this relation. Basic pig iron, valley quotations, and Cleveland[1] No. 3 Foundry pig iron, domestic quotations, were selected as the most representative price statistics in the United States and England respectively. These grades are more extensively produced than any others; regardless of their use, therefore, they are probably the most sensitive to changes in business conditions. Since the use of pig iron, however, is determined

[1] Sometimes called Middlesborough.

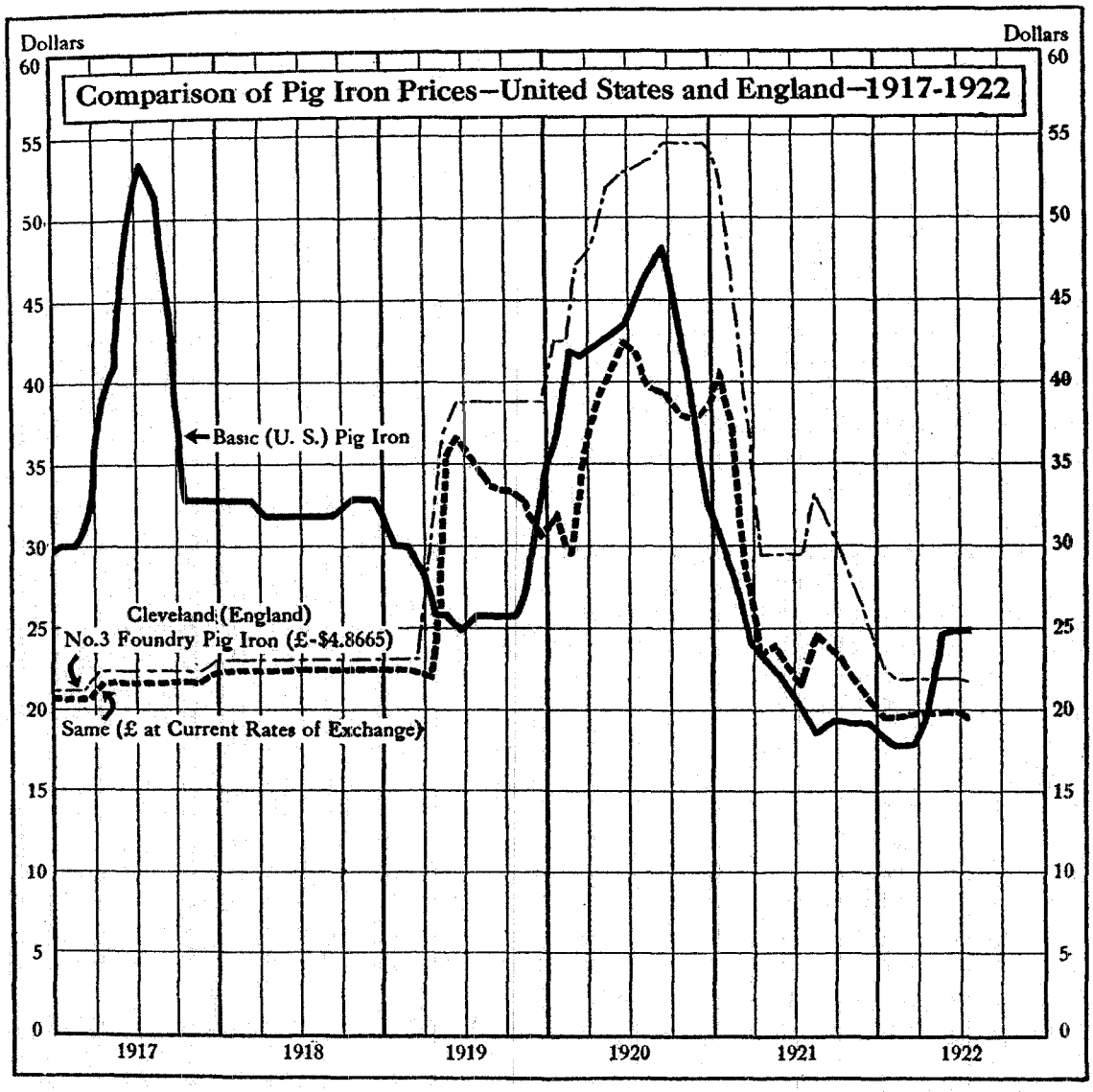


principally by its chemical analysis, an attempt was made to select grades which were comparable in this respect. Metallurgical data [2] indicates that no grade of English pig iron is exactly similar to United States Basic. Cleveland No. 3 Foundry was used because of its sensitiveness to general price movements. It is admitted that conditions might have existed during the war which changed the course of prices of these two grades alone without affecting the trade in general, but an average would be representative only if each grade used in its construction were properly weighted. Not only would this be a task of great magnitude, requiring an assumption of knowledge of trade conditions which the writers do not wish to assume, but it would also involve the use of statistics which have not been regularly available in the United States.

[2] The chemical analysis of some of the grades considered is as follows:

	U. S. Basic†	Cleveland No. 3 Foundry‡	Middlesborough Basic‡	Lincolnshire Basic‡
Carbon	3.50-4%	3.50%	3.10%	3.50%
Manganese	1.00-2%	.55%	1.50%	2.10%
Silicon	under 1%	2.50%	1.00%	.52%
Phosphorus	10-2%	1.50%	1.50%	2.13%
Sulphur	under .1%	.05%	.05%	.05%

† Bradley Stoughton, *Metallurgy of Iron and Steel*, p. 8.
‡ *The Iron Trade Review*, Vol. 66. March 18, 1920, pp. 844-45.



The foreign exchange rate had its influence on the relation of prices in the two markets, although until the outbreak of the war, the difference between par rate of exchange and the current rate was so small that a separate curve was not deemed necessary. In August, 1914, a sharp advance in the rate of cable transfers produced a distinct but temporary rise in the Cleveland curve. With the pegging of sterling exchange in January, 1916, at about $4.77 and the establishment of war control prices in Great Britain three months later, all fluctuations were removed except those caused by the occasional increases in governmental prices. When, however, official control was removed from exchange rates in March and from pig iron in April, 1919, the quotations moved in opposite directions. As can be noted from the par conversion curve, the price of Cleveland pig iron increased without a single recession until, together with the price of Basic pig iron in the United States, it reached its high point in September, 1920. Except for two or three rallies, English pig iron prices during the ensuing eighteen months steadily sought lower levels.

4. ESTIMATES VERSUS ACTUAL COSTS

A Method of Tying Up Estimates with Actual Cost Figures on the Regular Books of Account[1]

MORE and more accurate methods have been devised during recent years for obtaining the actual costs of production in most industries. This process has been greatly facilitated by the policy, now generally accepted, of tying up the cost books with the financial books, and thus subjecting the former to the check of double-entry bookkeeping and insuring that all costs incurred have been taken into account in obtaining the final cost of the product.

Cost accounting aids management most effectively when it brings to light the separate effect of each of the factors which produce the net profit or loss. Business enterprises are often so complex that they cannot be satisfactorily controlled as a single unit, but the most complex enterprises can be separated for this purpose into more simple parts and the efficiency of the whole thereby increased. When business operations are departmentalized, it is easier to find wastes and inefficiencies. This can best be accomplished by making comparisons with standards based upon either estimates, past experience, or both. With the wastes localized, the causes are more easily determined and eliminated.

Such comparisons with standards are commonly made outside the books. Yet it is just as desirable that the estimates be incorporated into the cost books as it is that the cost books be incorporated into the financial books. In this way not only is accuracy insured, but valuable statistical information is preserved for the management on the books themselves.

The following discussion illustrates the application of these principles to a public grain elevator. The accounts show the profits and losses arising from the following factors:

1. Actual expenses below or above estimated expenses.
2. Operations for a greater or lesser number of hours than estimated.
3. Operations above or below the estimated speed of handling grain.
4. Estimated profit included in selling price.

In order that these separate factors may be determined for each separate operation, it is necessary to departmentalize the elevator and collect the actual costs of each of the various departments. The elevator may be divided into two classes of departments: operating departments, such as unloading, elevation, storage, cleaning, drying and delivery; and contributory departments, such as administration, power, light and heat, and weighing. Each element of cost should be allocated to one or more of these departments. The costs of the contributory departments must then be allocated to the operating departments, from which they are charged to the product.

The costs should be charged to the grain which passes through the department by a method which distributes them as nearly as possible in proportion to the benefit which the grain receives. The method which best does this will vary among the departments. The methods of distribution which will ordinarily prove most equitable in a modern elevator are:

DEPARTMENT	METHOD OF DISTRIBUTION
Unloading	Machine-hour
Elevation	Machine-hour
Storage	Bushel-day
Cleaning	Machine-hour
Drying	Machine-hour
Delivery (bulk)	Machine-hour
Delivery (bagging)	Man-hour

[1] Adapted from a graduation thesis presented by E. H. Gault in the Harvard Graduate School of Business Administration in April, 1921, entitled *A Method of Cost Finding for Grain Elevators.*

Inasmuch, however, as it is impossible to know in advance either how much the actual costs in each department will be or how much grain will go through to absorb these costs, the distribution must be made on the basis of advance estimates. The following are the estimates which must be made:

(1) *The number of bushels of grain which will be handled by each department during the coming cost period.* It is very difficult to make this estimate correctly. Like an estimate of the future sales of a retail store or the revenue of a railroad, the estimate of the number of bushels it is expected to handle during the next cost period is based on the uncontrollable actions of other people and consequently at most can be only an intelligent guess. It should be made only after a careful study both of the amount of grain which has been handled in the past and of the present and probable future economic conditions in agriculture.

(2) *The cost of operating each department during the coming cost period.* This will be made up of the following: (1) fixed charges, which will vary for a bushel of grain in proportion to the number of bushels handled; and (2) current operating expenses such as labor, supplies, power and the like, which vary closely with the operating time in each department. The fixed charges, which usually make up one-third or more of the departmental expense, are constant. The current operating expense depends upon the number of bushels handled, or in other words upon the time the department is in operation.

(3) *The number of bushels each machine in a department will handle per hour.* This figure with that in number (1) makes it possible to get the number of hours of operation in the next cost period. If men are used instead of machines in handling the grain in a department, the number of man-hours will of course be the figure desired. This number of machine-hours or man-hours is the figure which makes it possible both to attach the elevator costs to the grain handled at the time it passes through the elevator and to estimate the current expense for each department.

The cost period in this business should be one year, which is long enough to iron out seasonal irregularities and short enough to enable the intelligent determination of the effect on the business of general agricultural conditions.

The means of tying up the cost estimates with the actual book records is found in the departmental accounts; here, likewise, it is possible to make comparisons and analyses of both the estimates and the actual results. In addition to the regular financial accounts, which of course include a general Profit and Loss account, the following departmental accounts are used:

1. Departmental Expense
2. Departmental Expense Burden
3. Departmental Expense Adjustment
4. Departmental Idle Time Adjustment
5. Departmental Revenue
6. Departmental Speed of Handling Grain Adjustment
7. Departmental Profit and Loss

The method of utilizing the accounts is as follows:

1. DEPARTMENTAL EXPENSE

Debit this account with the total actual expenses of the department.

Credit it with the estimated cost of actual operation: i. e. the actual hours of operation multiplied by the estimated rate, the accompanying debit being to Departmental Expense Burden.

The balance, which shows the difference between the actual expense and the estimated expense for the time the department was in operation, is carried to Departmental Expense Adjustment, which is ultimately closed into Departmental Profit and Loss.

2. DEPARTMENTAL EXPENSE BURDEN

Debit this account with the expense absorbed: i. e. the actual hours multiplied by the estimated rate, the accompanying credit being to Departmental Expense.

Credit it with the estimated department expenses: i. e. the estimated hours multiplied by the estimated rate, the accompanying debit being to Departmental Revenue.

The balance, which shows the gain or loss due to the difference between actual and estimated operating time, is carried to Departmental Idle Time Adjustment, which is ultimately closed into Departmental Revenue.

3. DEPARTMENTAL EXPENSE ADJUSTMENT

The closing balance of Departmental Expense, which shows the gain or loss due to a difference between the actual expense and the estimated expense for the time the department was in operation, is carried into this account in order to pre-

serve the item for statistical purposes. The account is in turn closed into Departmental Profit and Loss.

4. DEPARTMENTAL IDLE TIME ADJUSTMENT

The closing balance of Departmental Expense Burden, which shows the gain or loss due to a difference between actual and estimated operating time, is carried into this statistical account, which is in turn closed into Departmental Revenue.

5. DEPARTMENTAL REVENUE

Debit this account both with the estimated expenses (estimated hours multiplied by estimated rate), the accompanying credit being to Departmental Expense Burden; and with the estimated profit on the grain handled, the accompanying credit being to Departmental Profit and Loss.

Credit it with the proportion of revenue attributable to it.[2]

Bring into it the closing balance of Departmental Idle Time Adjustment, after which the balance will represent the gain or loss due to a faster or slower handling of grain than was expected. This balance is then carried to Departmental Speed of Handling Grain Adjustment, which is in turn closed into Departmental Profit and Loss.

6. DEPARTMENTAL SPEED OF HANDLING GRAIN ADJUSTMENT

The closing balance of Departmental Revenue, which shows the gain or loss due to a faster or slower handling of grain than was expected, is carried into this statistical account, which is in turn closed into Departmental Profit and Loss.

7. DEPARTMENTAL PROFIT AND LOSS

Credit this account with the estimated profit on the grain passing through the department, the accompanying debit being to Departmental Revenue.

Bring into it the closing balances of Departmental Expense Adjustment and Departmental Speed of Handling Grain Adjustment, after which the balance will represent the net gain or loss of the department. This balance is then carried to General Profit and Loss.

All the departmental accounts are now closed. The estimates have been incorporated in the books of account, and the comparisons between them and the actual costs have been preserved there for the use of the management.

[2] Since the elevator business is essentially a storage business with a lien on the grain going through, it is not incorrect accounting to credit the departments, before delivery, with their share of the revenue from the grain they have handled,—preferably in the proportion of each department's costs to the total costs.

CASE STUDIES IN BUSINESS

I. THE STAR COPPER COMPANY[1]

A Case Analyzing the Effects of Vertical Combinations in the Copper Industry, with Special Reference to the Anaconda-American Brass Combination

THE culmination in 1922 of the purchase of the American Brass Company by the Anaconda Copper Mining Company raised questions among the executives of the Star Copper Company as to the effect of that combination upon its own future, and as to the advisability of the Star Company itself undertaking a similar move.[2]

Vertical combinations of the Steel Corporation type have been prompted by a desire to insure an adequate and cheap supply of the limited amount of raw material to protect large investments in fabricating equipment. In the case of non-ferrous metals, however, which have more limited uses than iron because of their physical properties and higher cost, the current supply is usually entirely adequate for the current demand. The mine owner, accordingly, is interested in acquiring a sure outlet for his product and, therefore, seeks to acquire control of fabricating plants and contact with the consuming market, as was the case with the Aluminum Company of America.

General Considerations

The fundamental conditions prompting the Anaconda purchase have been outlined in a letter written by Mr. Ryan, Chairman of the Anaconda Board, in December, 1921:

> "For several years it has been increasingly apparent that in order to place the business on a sound foundation, it would be necessary to acquire manufacturing and fabricating plants through which the product of the corporation, refined copper and zinc, might find an outlet to the various industries which utilize such products.
>
> "It has been a growing conviction of the officers that the large investment required to carry on the business of mining, smelting and refining of copper and zinc was inadequately protected, and the business lacked a stabilizing influence so long as the producers could not reach out to the ultimate consumers of their product and take steps which it is believed necessarily must be taken if the copper producers are to meet the competitive efforts of the producers of other metals in marketing and distributing the same."

Advantages of Continuous Operation

A steady outlet to protect large investment in equipment, and improved marketing and distributing methods have been two great needs of copper mining companies. Periods of idleness in the copper industry have involved large costs for maintenance and depreciation on equipment, and for repairs as a result of the flooding and caving of mine shafts and galleries. The Anaconda Company spent $6,000,000 for maintenance alone during the period of idleness in 1921. The danger of losing skilled workmen during the idle periods is illustrated by the difficulties of copper mines which resumed operations in the summer of 1922. Since mines are in isolated regions, once laborers have

[1] Fictitious names are used to designate the concerns the problems of which are used as a basis for discussion except in cases in which the facts are publicly recorded.

[2] The subject of vertical combination or integration in industry has rarely been discussed from the viewpoint of the individual business concern. Various works upon combinations and the standard texts in economics deal with the subject briefly. See Lewis H. Haney, *Business Organization and Combination*, pp. 24, 33-34, 132-134, 361-362.—Jeremiah Jenks and Walter E. Clark. *The Trust Problem*—pp. 115-118—Eliot Jones, *The Trust Problem in the United States*, pp. 3-4, 188, 196, 198-199, 204, 234-235, 502-503.—D. H. MacGregor, *Industrial Combination*, pp. 64, 88, 95-106.—Alfred Marshall, *Industry and Trade, Principles of Economics*, Vol. I, pp. 60-63.

been forced to find work in other localities, a strong incentive in the form of high wages is not always sufficient to draw them back to the disagreeable work in the copper mines. New immigrants are used extensively in this work; consequently, the reduction of this supply through immigration restriction has intensified the labor difficulties.

In the past, lack of coordination of supply and demand has made continuous operation of mines difficult. Small, inefficient mines, attracted into operation by periods of metal scarcity and high prices, require several months, even a year, to supply material to the market. Often activity in the market subsides by the time full production is reached. When the demand does drop, metal stocks are usually at their highest, and a severe decline in the market price follows. A sure outlet for a portion of its product at such times, even at a low price, would be valuable to a mining company in helping it to maintain its properties in working order, to employ its skilled workmen, and to be in a position to take immediate advantage of any improvement in market conditions by expanding production. In this connection, however, it must be noted that any contribution to stocks during a depression must tend to prolong the period of low price and inactivity for the trade at large. From the selfish standpoint of the company in question, the disadvantage of a longer period of low price must be balanced against the advantages of continuous operation. The use of a company's ore reserves during periods of low price is undesirable and should be limited to an amount sufficient to sustain continuous operations. Finished copper inventories which may accumulate in a dull market soon represent large amounts of money and become expensive to carry during depression. A company with accumulated stocks of copper refusing to sell below cost is gambling, not only that prices will rise, but also that they will rise soon enough and high enough to reimburse it for the accumulating interest charges.

Marketing Situation

The general market situation referred to by Mr. Ryan in the second paragraph of the above quotation presents a problem peculiar to copper, the solution of which provided one of the prime motives for the combination undertaken by Aanaconda. During the war, military and naval demands required all the facilities for production in the copper and brass industry. Ordinary requirements were necessarily served by substitute materials, which in many cases were inferior and in most cases were cheaper than copper and brass. The production of substitute materials, such as aluminum, was largely controlled by single large producers who fortified themselves in the new fields by extensive advertising campaigns and by other intensive selling methods. The copper industry, which has always been highly competitive, has been marked by a lack of coordination of selling effort both among the producers and between the producers and fabricators. The metal and its products have been sold largely on their recognized worth. The industry was poorly prepared, therefore, to recover the domestic market when the depression of 1921 reduced demand to a point where both copper and its substitutes were unable to find an outlet. Copper for electric wire and apparatus was in demand. This trade normally constitutes one-fourth to one-third of the domestic consumption. To dispose of the remaining two-thirds to three-fourths of the domestic consumption and of some of the copper formerly taken by the export trade required selling methods similar to those employed by competing metal producers.

The task confronting the copper industry as a whole was apparently to educate the small consumer to demand copper and brass articles even though slightly higher in original cost, and to persuade dealers to supply that demand from adequate stocks

at prices consistent with the greatly reduced cost of copper. Confidence that direct contact with the consuming field would facilitate action along these lines doubtless was one of the underlying motives behind the purchase of the fabricating plants by the Anaconda Company. This confidence was strengthened by the experience of the company with a wire mill purchased in 1918 which operated almost at capacity throughout the depression of 1921, and with a shingle mill in New Jersey which has provided an increasing outlet for the company's copper.

In the case of the Anaconda Company, combination meant that selling expense would be reduced to a minimum. The plan has provided that the United Metals Selling Company, a marketing subsidiary, will continue to serve other copper companies. This business will therefore maintain the selling organization, and any surplus copper of the Anaconda Company will need bear only the overhead actually incurred by itself. Thus, from the standpoint of continuity of operation, reduction of inventory, and elimination of selling expense the combination appears advantageous to the Anaconda Company.

The Interests of Fabricators

The advantages of the combination to the American Brass Company are not so apparent. Any price concession on raw material purchases would only reduce the profits of the Anaconda Company and would prove of no real advantage to the stockholders of the fabricating plant, all of whose holdings would have been exchanged for Anaconda securities.

There was little prospect for improvement in fabricating methods since the mills of American Brass Company were considered to be among the most efficient. Some reduction in capital and corresponding saving of interest might be possible since the mill would require less reserve inventory of raw material when purchasing from an assured source than when purchasing on the open market. Aside from this possible saving of interest and any benefits from aggressive marketing undertaken by the new organization, it would seem that the American Brass Company found its greatest incentive to combination in the favorable price offered of $300 per share of American Brass stock, payable, half in Anaconda stock of $50 par value and half in cash. Roughly $45,000,000 was offered for a Company capitalized at $15,000,000. The market value of Anaconda Stock was probably expected to respond favorably after the combination. In addition, the management of the American Brass Company undoubtedly considered the danger to its own existence if the Anaconda Company should secure or build other fabricating plants, thereby further increasing the over-expansion in the industry. Considerations of internal management also played a part in bringing about the final decision.

Capital Requirements—Concentration of Risk

One of the dangers of a vertical combination of the Anaconda type from the standpoint of the corporate owners lies in the risk of concentrating a large amount of capital in different departments of the same industry. At a certain stage of the business cycle, or at a time of peculiar stress in the industry, the entire capital of the corporation may be endangered or its earning capacity in all departments reduced at once. A sound principle of investment is that of scattering risk, of having funds in diverse fields in order to avoid subjecting entire holdings to the same economic and business forces. Any vertical combination lays itself open to the risk of concentration of capital investment.

Case of the Star Company

In June, 1922, the Star Copper Company was considering the advisability of attempting a similar move. The Star and its controlled companies produce lake copper as contrasted with that of the Anaconda Company, which is electrolytic. It has

sold its product directly to manufacturing consumers through its own sales force. The company ranks among the largest producers in the United States. In the past it is reported to have disposed of approximately 70% of its output in Central Europe, especialy in Germany. Its financial conditions were such that any reasonable consolidation or purchase could be accomplished without undue strain on its resources. The situation facing the management was as follows:

The mines had been closed for eight months. A large stock of copper had been sold during that time at a loss until about 40,000,000 pounds remained, or four months' production in normal times. Stocks in the country as a whole had been reduced from a high figure of 650,000,000 lbs. to about 450,000,000 lbs. Europe was in great need of large quantities of copper and although exports were holding up remarkably well, financial weakness of importing nations made a reduction in takings apparently inevitable at an early date. In normal times from a third to a half of the nation's copper is exported.[3] With such an important outlet dependent upon the financially weak nations, with considerable stocks of copper remaining, with many mines resuming operations, and with the fabricating business, although improving, far below its war-time activity, it was apparent that severe competition would exist in the domestic market in the immediate future, and that the situation would be particularly serious for the Star Company, which had previously exported such a large part of its product.

Some injury to the Star Company's domestic market as a result of the Anaconda combination is probable. The maximum consumption of the American Brass Mills will more than absorb the maximum production of the Anaconda Company mines, and even with reduced output in times of depression, the brass mills should absorb enough copper to enable the Anaconda Company to operate its properties. Hence, the net result to the trade during prosperous times should be merely to remove the largest single producer and the largest consumer of copper simultaneously from the market leaving the remaining producers to sell the remaining consumers. The flow of metal should remain approximately the same, merely being diverted to different channels. In times of depression, however, the continued production of the Anaconda Company will retard the reduction of accumulated stocks and prolong the periods of low price. To that extent the independent producers may be adversely affected by the combine and may need the protection of a similar outlet.

It seems, moreover, that the Star Company is sufficiently like the Anaconda Company as regards size, location, and general organization to be subject to the same fundamental conditions which made acquisition of a fabricating plant desirable for the latter company. To gain the advantages accruing from a steady outlet for at least a minimum production and to facilitate the adoption of agressive marketing methods, the management of the Star Company should favor entering the fabricating field provided a suitable plant, or plants, is available. Construction of new plants seems inadvisable in the light of the tremendous expansion of the fabricating facilities during the war as suggested by Mr. Ryan in his letter of December, 1921, to his stockholders:

> "A study of the brass industry developed that there are engaged in the United States in lines of manufacturing and fabricating copper product from raw materials about 32 concerns of sufficient importance to be taken into consideration, and that the total capacity of the plants owned by the above companies exceeds annually an output of 1,880,000,000 pounds of copper. As this capacity is considered more

[3]

	Production Refined Copper	Exports Refined
1912	1,568,000,000 lbs.	746,000,000
1913	1,615,000,000 lbs.	869,000,000
1914	1,534,000,000 lbs.	749,000,000
1915	1,588,000,000 lbs.	639,000,000
1916	2,127,000,000 lbs.	717,000,000
1917	2,086,000,000 lbs.	1,031,000,000
1918	2,108,000,000 lbs.	690,000,000
1919	1,776,000,000 lbs.	365,000,000
1920	1,568,000,000 lbs.	464,000,000
1921	1,020,000,000 lbs.	553,000,000

Mineral Resources 1921. U. S. G. S.

than twice as much as has ever been required by the United States in pre-war years and probably 80% more than has been required during the comparatively busy years in the United States of 1919-1920, and as it was found that a good many of the plants are well situated for distributing, modern in construction, and could meet business requirements as well as plants which could be constructed, it became apparent that further building of plants would merely add to an already overconstructed mill capacity and that an effort in this direction would result in adding demoralization rather than stabilization to the situation."

The requirements as to suitability of plants for the Star Company appear to be as follows. The minimum copper consumption of these plants should enable the Star mines to operate without loss. The product should be diverse, avoiding the extreme fluctuation of output which often occurs when the market for a single product or group of products disappears. Part of the production should be for the ultimate consumer, to enable the Star Company to engage in aggressive selling campaigns; part of the product should be shapes, bars, and sheets for further fabrication to insure volume of copper consumption. At least part of the plants should be in the middle west where water transportation could be used from the mines, with a resultant substantial saving on freight. The price should be reasonable, though it should be recognized that a plant purchased cheaply because of mismanagement and failure during the depression might prove more costly than a more expensive purchase with a high "going" value and a capable staff. Acquisition of a successful business would presumably be an asset whereas acquisition of an unsuccessful business would be likely to prove a liability if men trained in copper attempted to accomplish what presumably experienced brass men have abandoned.

Providing such fabricating plants are available the Star Company should find it advantageous to enter the fabricating field. If plants with the characteristics described are not available, it would be better for the Star Company to take its chances on disposing of its products on the open market as heretofore.

2. MANSFIELD BOILER AND HEATER COMPANY

A Case Dealing with the Jurisdiction to Be Granted a Works Committee under an Employee Representation Plan

IN January, 1921, the Works Manager of the Mansfield Boiler and Heater Company, a large New England Corporation, was dismissed for insubordination and failure to cooperate with superiors. Though a man of strong personality and possessed of a good production record, this manager indiscreetly voiced opinions contrary to the policies of retrenchment, adopted by the Board at the time, and knowingly violated instructions which involved the layoff of employees and a reduction in wages.

The situation was complicated by a petition for his reinstatement signed by 60% of the employees. This document was presented to the Works Committee, established two years previously, that consisted of an equal number of representatives of employees and management. The powers of this committee were advisory only, but appeal could be made ultimately to the Board of Directors upon the request of two-thirds of the committee. Delay upon action was secured by the management representatives upon presentation of the petition.

After full consideration of the possible courses of complying with or denying the request, or of passing responsibility to the Board of Directors, the President of the Company appeared in person before the Committee, convinced the members that their demands were extremely harm-

ful from the Company's standpoint, and secured withdrawal of the petition, though he took great pains to prove to them the sincerity of the directors' appreciation of their opinions and suggestions.

The primary value of a works committee lies in creating mutual understanding between the management and the employees; otherwise, such a committee becomes cumbersome and ineffective. If, through the fear of undue encroachment on the powers of the management, the President had abruptly taken the matter out of the hands of the Works Committee, he would have destroyed the mutual confidence which is so necessary for this form of management.

To permit the employees to appoint their own managers, however, would likewise be unwise as it would lead to politics and inefficiency. By talking the matter over with the employees, the President succeeded in making the committee feel that while the Directors retained absolutely the right of decision as to all members of the management, they were glad to consider the opinions of the workmen. By this means, he not only did not have to make any concessions but preserved the respect of both the employees and executives for the Works Committee.

This case indicates that employees today feel that they are entitled to have a voice in determining the person who exercises the enormous influence over them of a manager. It also suggests that if a works committee is rightly handled, the employees desire only advisory power, but if this advisory power is not respected, they are quick to demand something more substantial. Furthermore, this problem shows the great value of having an organized means of settling labor misunderstandings before they become of serious proportions.

3. PROCTOR PIANO COMPANY

A Case Dealing With the Expansion of a Piano Manufacturer into the Field of Player Pianos

IN recent years the management of the Proctor Piano Company has had under consideration the addition of models of a fine type, electrically driven player piano to their present line of straight pianos. During the latter part of 1921 and the early part of 1922, the executive officers made an intensive study of the whole situation and decided against entering the player field. The decision was based largely on their fear of injuring the reputation for excellence that they had so long maintained in the manufacture of their straight pianos.

The Company is an old established firm which has been able to build up over a long period of years an enviable reputation as a producer of the highest quality of grand and upright pianos. From the very beginning the Company has attempted to produce the finest product possible, and a tradition for quality has become instilled not only in the management, but also in the employees, many of whom have been with the organization for a period of twenty-five years or more.

Though the management has temporarily rejected any plan of entering into the manufacture and marketing of player pianos, careful consideration of the facts indicates that the chances for successful expansion into the player-piano field might well warrant serious reconsideration.

In determining whether or not the Proctor Piano Company should manufacture player pianos, the possible effects upon the Company's production, distribution, and finances, as well as the effects upon the attitude of the buying public towards the Company and its product must be considered.

Production Aspects

Undoubtedly numerous production problems would result from the undertaking. It would call for technical knowledge and production methods of which the present organization is ignorant. Experts would have to be sought in the market and workmen trained. Fully competent men could be procured only with difficulty. Moreover, the change in production policy might react unfavorably upon the present employees. Many of these are old, highly experienced mechanics whose loyalty and interest in their special work have been developed to a high degree. A certain subtle relation between key action and tone, which is one of the criteria by which the trained musician and expert manufacturer judge a piano, has not been attained as yet in the instrument equipped with a reproducing mechanism. Hence, entry into the manufacture of player pianos might dampen the interest which the employees now possess.

In the next place, the problem of securing a desirable reproducing mechanism presents an obstacle. The management should be satisfied with only the best and it might be difficult to get this. Even provided the desired rights could be obtained, purchasing would be complicated to greater degree than at present.

The adaptation of the present straight piano model to fit player needs presents a further problem. Proctor success has in part been built about certain features of design, which could not probably be incorporated in a player.

Since a high degree of specialization now exists in the Company, the attention of executives can be focused on maintaining the quality of the straight piano. To manufacture a player would mean a sacrificing of this specialization to some degree and reorganization would have to be undertaken to meet the new demands.

The production problem can be viewed from a slightly different angle, however. The straight piano and player piano businesses are closely allied. The wood machining and certain other processes are almost identical. To make a player would probably mean only the institution of a new department to care for the assembly and installation of a reproducing apparatus. There is no reason to believe that there need be disruption of the present personnel. The greater number of employees could continue as at present making straight pianos. Other specialists would turn their attention to the player. Many of the difficulties that now seem to present themselves from a production standpoint are merely developmental problems. Much of the experimentation could be carried out and the difficulties solved before the factory organization was disturbed. Unless a good chance of success was present, the scheme could be dropped.

We may conclude, then, from the production standpoint, that there are difficulties, but these are not insurmountable. Other manufacturers of high-grade pianos have apparently solved the problems.

Distribution Aspects

From the standpoint of distribution, there are no great difficulties. The same exclusive agents can be used for the player as for the straight piano. Moreover, some of these have expressed a desire for the player, and this desire by dealers will increase if the demand for player pianos increases. Many good dealers will desire an agency which can furnish a player piano as well as a straight piano.

A more careful and elaborate advertising program than hitherto used would probably be necessary and would have to be worked out.

Consumers' Attitude

The market of a high-grade piano is governed largely by the approval of the musically cultured, those who know how to judge a musical instrument. The question arises whether or not a venture into the player field might injure the prestige

of the company with these discriminating people.

By refraining from making player pianos, the Proctor Piano Company has gained the unique position of having specialized in the straight piano, of having refused to go into a field where the finest tone and action has not been obtainable. To begin manufacture of the player would mean loss of this position as a specialist.

It is a matter of opinion, however, as to whether the prestige of the Company as a maker of straight pianos need suffer. To be sure, it is probably true at the present state of development that a player piano cannot have that fine adjustment of action for manual playing that the straight piano offers. It is possible that musicians would look with disfavor upon the entrance of the Company into the field. Yet we must consider that the Company would still manufacture a straight piano. Moreover, there is reason to doubt whether the building by a manufacturer of player pianos as an allied product need bring the condemnation of musicians. This conclusion is based on three facts: Firstly, by making records, a large number of the great pianists have given a certain mark of approval to the reproducing piano. Secondly, these same pianists and conservatories of music use the best player pianos in their studios and schoolrooms to study the interpretation of music by master musicians. Finally, many of the manufacturers of famous pianos have gone into the production of player pianos without apparent harm to reputation; their instruments are still used by artists in recitals.

From the standpoint of many of those buyers of pianos who are not themselves musicians, it would seem desirable for the Proctor Piano Company to produce a high-grade player. Since these people buy largely on the basis of the reputation of a piano, the Proctor Piano Company could make capital of its good name in the sale of player pianos. It would seem only logical that these people should desire a reproducing piano, for it would give them an opportunity to enjoy music in their homes, while the straight piano can simply serve a great part of the time as an ornament for their music rooms and parlors. It would thus appear that two parts of possible markets are cut off by inability to furnish a player piano; namely, that of rich people who are not musicians and that of musicians who desire a reproducing piano for study purposes.

Again, the player piano is comparatively new. Great improvements can undoubtedly be expected. As perfection is gained, demand should grow. That manufacturer will be best fitted to take advantage of an increased demand who has learned the business early and developed technique. This should be considered as a factor favoring entrance into the field now rather than later.

To summarize, though there is possibility of the Company injuring its reputation by manufacture of a player piano, this seems slight, while the possibilities of development of a player offers opportunity of augmenting its good name.

Competitive Aspects

From the standpoint of competition, it would appear desirable for the Company to be in a position to meet the demand of desirable agents for player pianos. On the other hand, as pointed out before, the Company now has the competitive advantage of being a specialist.

Of prime importance is the competitive position of the markets for the two types of product. In the straight piano field, competition is sharp, but the Proctor Piano Company has been able to hold its own. Moreover, the demand is apparently growing, so that the factories can be normally kept busy. On the other hand, it seems not improbable that with improvements and the reduction of the now excessive prices, the demand for the finest type of reproducing players will

grow. Although numerous manufacturers are in the field, it would seem large enough to offer the Proctor Piano Company a good opportunity for expansion. The Company's good name would help it to get its place in the market.

Financial Aspects

To enter the player field will call for the outlay of considerable capital on experimentation with possible failure. Further outlay would be necessary if actual production were begun.

Since the player piano apparently has a future, and is so closely allied to the present product, it would seem advisable for the Company to undertake the development of a player piano. Then, if a desirable product could be obtained from experimentation, the Company could capitalize its present reputation in the sale of player pianos.

REVIEWS OF BUSINESS LITERATURE

BUDGETARY CONTROL. J. O. McKINSEY. 465 pp. (New York, *Ronald Press Company, 1922.*)

COORDINATION is the keynote of Mr. McKinsey's book on "Budgetary Control." In his discussion he rules out the policy of calculating departmental profits and emphasizes the need for business firms to correlate the activities of all departments, especially those including selling and manufacturing operations. All departments in a business exist because each furnishes a service which adds to the profitableness of the enterprise. Since some means, however, is essential to test the efficiency of the various departments, Mr. McKinsey suggests that a departmental budget which should be a schedule of expected performance be prepared as a measure for checking actual operations. The popular conception of a budget is a schedule of estimated receipts and disbursements covering all the activities of a business. Such a schedule Mr. McKinsey classifies as a financial budget which requires the cooperation of all departments in its preparation.

The book, which combines a development of the theory of budgetary control with observation of present practise, should be of value to most business men. It contains a complete, and in parts somewhat lengthy, discussion of the need for budgetary control, of the preparation of departmental budgets and their coordination with the financial budget, the application of budgetary control to manufacturing, merchandising and non-commercial enterprises, and of the estimated balance sheet and profit and loss statement. A model manual of budgetary procedure is also included. In the appendices a copy of the United States Budget and Accounting Act, of the Administrative Code for the State of Ohio, and a Trust Company budget system are included.

Although businesses are organized differently, there are five functional groups of activities, the sales, the production (in case of manufacturing) or the purchasing (in case of merchandising), the personnel, the finance and the accounting functions. The author points out that it is impossible to perform these functions adequately without cooperation of the functional officers who should constitute an executive committee for final approval of all budgeting. In order that the departmental officers will realize its importance, the chief executive, who is the final authority in settling disagreements relative to coordination of departmental programs, should be in direct control of the budget. The persons responsible to function within the estimates should prepare them, not only because they are best qualified but because it will do much to make them realize their responsibility not to exceed the estimates submitted.

Mr. McKinsey has rendered a service by collating and organizing practises which most business concerns have been using in some degree since the beginning of industrial organization, but he has made no new contribution to accounting theory or practise. The value of budgetary control as outlined in this book is indicated in one case which has come to the attention of the reviewer. In that instance the treasurer of a corporation employing fifteen hundred persons, and having annual sales of $75,000,000, died suddenly. He was successful in his position, but he had always made his calculations mentally or on scraps of paper. No one in the company had been trained to do this work, with the result that the organization was disrupted, and finally several months later it was necessary for the company to bring

in a person from another corporation to fill the position. The difficulties thus encountered would have been improbable under an efficient system of budgetary control.

Since actual circumstances will never be repeated from one budget period to another, in the preparation of estimates past experience should be used only as a guide in determining future marketing and manufacturing conditions. Even then reports of actual operation will often vary from the estimates. Although some means for the revision of the estimates must be provided, the author gives but vague indication of suitable methods. He neither states how large an error should justify a revision, nor indicates how the difficulties experienced by concerns operating a system of budgetary control during a depression should be overcome. However, the book is intended to be suggestive and not arbitrary. Its *raison d'être* is to discuss a method of collecting information on which administrative decisions and control are based.

ORGANIZED PRODUCE MARKETS. JOHN G. SMITH, M. A., Assistant Professor of Commerce, University of Birmingham. 238 pp. (New York, *Longmans, Green and Company, 1922.*)

DURING the last 30 years many articles upon speculation in organized produce markets have appeared. Some of them serious and economic studies, others little more than the biased arguments raised by protagonists in the heat of legislative battles. In spite of the large amount of material now available, Mr. Smith's book fulfills the distinct need for a study which would assemble the facts and present in compact and lucid form a description of the principal features of the structure and functioning of produce markets.

While the volume is intended primarily for the use of students, the author has avoided terms which might be confusing to those unfamiliar with economic theory; it should, therefore, be of added interest to the lay reader.

While the work is largely descriptive, a certain amount of critical analysis is included. Following a description of the organization and trading methods of the world's principal produce markets, Mr. Smith takes up at some length the economic function of speculation as well as its abuses and regulations inaugurated for its control. The chapter headings are suggestive of the subjects treated: Warrants and Grading; The Internal Organization of the Principal Produce Exchanges; Spot Transactions, Futures and Privileges; Crop Reports and Market Price Quotations; Futures in Commodities other than Cotton and Grain, and Marketing at Auction. The appendix contains examples of market reports, copies of warehouse receipts, delivery contracts and other forms.

The features that commend the book to the reviewer may be briefly enumerated:

First, as compiled above, it gives a very complete picture of the various phases of the produce distributive organization.

Secondly, it draws interesting comparisons between the organization and practise in markets of various countries.

Thirdly, the analysis of the economic functions of speculation is simple and clearly presented.

Lastly, the discussion is not limited to wheat as is often the case in such discussions, but the markets for cotton, grains other than wheat, pepper, sugar, coffee and metals are included. Nevertheless the short discussion of certain organized raw material markets is inadequate.

The views of the author on the economic function of speculation are orthodox. He is favorably inclined toward the speculative market because he considers it necessary to furnish an active market to meet hedging needs. He also maintains that active, legitimate speculation by concentrating risks on experts, tends to narrow the difference between the price paid by the

consumer and that paid to the producer. In the discussion of the influence of Speculation upon Prices, he expresses the opinion that speculation has produced greater stability of prices; as he puts it "A diminishing range of movement, less variation from the average." At the present time this is a moot question. It is not difficult to find those who believe that the psychology of speculative trade upsets that nicety of adjustment of demand and supply which has often been ascribed to the speculative market. Others claim that more violent fluctuation of price is brought about by the arbitrary division of future delivery periods characteristic of organized speculative markets. Nevertheless, Mr. Smith's exposition will be received as a clear, concise and intelligent statement of generally accepted theory and description of present practise.

CHAIN STORES, THEIR MANAGEMENT AND OPERATION. WALTER S. HAYWARD and PERCIVAL WHITE, with chapters by JOHN S. FLEEK and H. MACINTYRE. 392 pp. (New York, *McGraw-Hill Book Company, 1922.*)

THE increase in the volume of goods sold through chain stores during the past few years has been phenomenal. Although the growing importance of this type of retail outlet has caused it to become the subject of considerable study and discussion in business circles and on the pages of current publications, no effort has been made, heretofore, to present an inclusive treatise on chain stores. The authors are, in a sense, pioneers in the field and doubtless have been handicapped in the collection and organization of their material by lack of reference matter and absence of precedent.

The book is broad in its scope. After an introductory chapter outlining the principles of the chain store field, the authors proceed to discuss the location and physical aspects of member stores of the chain. Merchandising Problems are presented within a range of ninety pages under the titles: Purchasing, Warehousing, the Sales Problem, Competition, Pricing and Turnover, Expenses, and Profits, and Advertising. Personnel Problems are then discussed with special reference to organization, training men for promotion, maintaining morale and developing the store manager. Finally, the elements of Control and Expansion are presented in a series of chapters dealing with warehousing and purchasing records, supervision of retail outlets, centralization of executive control, financing, and insurance.

It is to be regretted that the authors have been forced to deal only superficially with many important matters because of the breadth of the field they have chosen to cover on such an important subject; for example, the statement of one man as to costs of doing business in grocery stores, is quoted in spite of the fact that the results of detailed studies are available.

The general method of treatment of the first section of the book is changed, in the latter chapters upon "Control and Expansion" to a method whereby discussion is confined largely to a particular chain of stores. Specific methods are described, actual record forms are reproduced and explained, and weak and strong points of the system are indicated. Increased use of this scheme of treatment would not only render the book useful to the practical man striving to solve problems of chain store operation, but would also provide a basis for more intelligent discussion in classes either of college students or of chain store employees where the book may be used as a text. The method might well have been applied to other portions of the book by the use of a particular chain as a basis for the presentation with the interjection of methods employed by other chains for comparison.

In the closing six chapters of the book the discussion of functions is abandoned in favor of a description of different types of chains, namely; the Manufacturer's Chain, the Grocery Chain, the Drug Store Chain, the Five-Ten-Twenty-Five Cent

Chain and the Dry Goods and Clothing Chain. This treatment entails repetition of much of the material appearing earlier in the text. These chapters might well have been placed in the appendix along with the bibliography of articles which have appeared in periodicals on the subject of chain stores. An outline placed at the head of each chapter in topical form together with paragraph headings, makes reference easy.

The work may well be described as a good compilation of the information available to date on chain stores; it does not try to present new theories or practises. "Chain Stores" should prove valuable to students of marketing and merchandising and, to a lesser extent, to those actually engaged in the field. More detailed studies based upon the subdivisions of the present work will doubtless be developed in the near future.

BOOK NOTICES

Anderson, B. M. ARTIFICIAL STABILIZATION OF EXCHANGE CONDEMNED; Outline of a Fundamental Solution. *Chase National Bank, New York, 1922.*

Ashe, Sidney Whitmore. ORGANIZATION IN ACCIDENT PREVENTION. *New York:* $2. *McGraw-Hill, 1922.*

ASSOCIATION OF COLLEGIATE SCHOOLS OF BUSINESS. Social Students in Secondary Schools. Bds. $1. *Chicago: University of Chicago Press, 1922.*

Aughinbaugh, W. E. ADVERTISING FOR TRADE IN LATIN AMERICA. $3. *New York: Century, 1922.*

Basset, Wm. R., & Heywood, Johnson. PRODUCTION ENGINEERING AND COST KEEPING. *New York: McGraw-Hill, 1922.*

Benson, P. A. and North, N. L. REAL ESTATE PRINCIPLES AND PRACTICES. $6. *New York: Prentice-Hall, 1922.*

Binder, R. M. BUSINESS AND THE PROFESSIONS. $3. *New York: Prentice-Hall, 1922.*

Bowie, J. A. SHARING PROFITS WITH EMPLOYEES. $4. *New York: Pitman, 1922.*

Broderick, J. T. PULLING TOGETHER. $1. *Schenectady, New York. Robson and Adee, 1922.*

Charters, W. W. Director of the Research Bureau for Retail Training, Carnegie Institute of Technology. HOW TO SELL AT RETAIL. $3. *Boston: Houghton, Mifflin Company, 1922.*

THIS book is a collection of practical methods used by salespeople in meeting selling difficulties. It is based upon interviews with three hundred salespeople "selected with unusual care" from several large department stores. It deals entirely with retail sale from the moment a customer receives the salesperson's notice until the sale is completed. Common mistakes are pointed out, practises described in detail, and directions given for meeting many situations.

The book is essentially a handbook for retail salesmen and as such covers the field in a detailed and exhaustive manner.

Chellew, Henry. HUMAN AND INDUSTRIAL EFFICIENCY. *New York:* $2. *Putnam, 1922.*

Chenery, William L. INDUSTRY AND HUMAN WELFARE. *New York:* $1.75. *Macmillan, 1922.*

Chisholm. COMMERCIAL GEOGRAPHY. *Longmans, Green, 1922.*

Clark, W. GANTT CHART; A WORKING TOOL OF MANAGEMENT. $2.50. *Ronald Press, 1922.*

Conyngton, Thomas, Bennett, R. J. and Pinkerton, Paul W. CORPORATION PROCEDURE. $10. *New York: Ronald Press, 1922.*

THE authors of this volume have made it their purpose "to furnish in a single volume, an accurate, practical, and conveniently arranged manual that will answer as nearly as possible those constantly arising problems of corporate procedure. The book is, in short, intended to meet the practical needs of all those concerned in corporate affairs—lawyers, bankers, accountants, corporation officers, and business executives generally." The services of specialists in their respective fields have been used in order to cover adequately the wide scope of the book.

The first section "Corporate Law" is by Mr. Conyngton and covers the Incorporation, Stock, Control, Charter and By-laws of a Corporation; Organization Meetings and Records, Stock Records and Stock Transfer, The Treasurer, Cor-

porate Financier, and Allied Forms of Organization. All these are treated from the legal viewpoint. The Section "Corporate Finance" is based directly on *Business Finance* by William H. Lough, President of the Business Training Corporation, and adapted to the present volume by him. Section three on "Corporate Accounting" is by Mr. Bennett and Mr. Pinkerton. It deals with Surplus and Reserve Accounts, The Original Capital of the Corporation, Special Cases in Capital Stock Transaction, Banks and Funds, Corporate Combinations, Dissolution, Reorganization, Receivership and Corporation Statements. The fourth and last section is supplied by Mr. Conyngton and contains 250 forms used in corporate procedure.

Cooper, C. S. FOREIGN TRADE MARKETS AND METHODS. *New York: Appleton, 1922.*

IN describing the "how" of foreign trade Mr. Cooper devotes the first fifteen chapters of his book to pointing out the necessity of "Knowing the Export Business," and of "Training for Foreign Commerce." Several chapters present information on such miscellaneous subjects as Marine Insurance, Cables, Financing Foreign Trade, Definition of Foreign Trade terms, the House Organ in Foreign Trade and Newspapers and Periodicals as Foreign Trade Builders. The remainder of the book is given over to a not altogether satisfactory description of the foreign trade possibilities in various parts of the world—Japan, China, the Philippines, India, Western Asia, the Near East, Africa, Russia, The British Empire, New Europe, the Caribbean countries, and South America.

Deiser, George F., and Johnson, Frederick W. CLAIMS: FIXING THEIR VALUES. $2. *New York: McGraw-Hill, 1922.*

Dewey, Davis R., and Shugrue, M. J. BANKING AND CREDIT. $3. *New York: Ronald Press, 1922.*

THIS volume is "written primarily to meet the needs of the individual who uses the bank for credit accommodation; its aim is to explain the problems confronting the customers of a bank, and the significant factors that control the terms and conditions upon which credit may be obtained." After two introductory chapters, defining the nature of money and of credit and discussing the different forms of money in circulation in this country, the book proceeds to a recital of the characteristics and uses of the various forms of credit instruments other than money. A separate chapter is devoted to the subject of the negotiability of certain of these credit instruments, with especial emphasis upon methods of endorsement.

The second main division of the book, after outlining the various kinds of banking and credit institutions, takes up in detail the nature and origin of the various items appearing in the balance sheet of a bank. One chapter each is allotted to funds belonging to stockholders, deposits, bank-note circulation, investments, and bank reserves. The discussion of commercial loans, covering six chapters, includes a particularly good analysis of the credit statement which is submitted to a bank.

The third main division of the book deals with various important parts of our credit structure which are outside of the immediate operations of the commercial bank. One chapter is given to the clearing house, one to the national banking system, three to the organization of the Federal Reserve System and the operations of the Federal Reserve Banks, one to bank and trade acceptances, three to foreign exchange, and one to the New York money market. The final chapter briefly describes certain major monetary problems, past and present.

The Appendix includes a series of illustrative problems, based on the various subjects covered in the text, which makes the book especially useful for teaching purposes.

Dewing, Arthur Stone. CORPORATION FINANCE. *New York: Ronald Press, 1922.*

THIS book, based on the author's larger work "The Financial Policy of Corporations," is a summary of the commonly accepted working principles of corporation finance. It is primarily a text-book for colleges and schools of business administration, sufficiently condensed so that, if necessary, it can be read easily by students during a single semester.

After a preliminary discussion of the financial structure of the corporation, the book takes up in greater detail the three classes of corporation securities, common stock, bonds, and preferred stock. The steps in the promotion of various types of enterprises and the nature and functions of the underwriting syndicate are considered next. There follows a thorough treatment of corporation accounting and an analysis of the various items appearing on the balance sheet and income statement.

Turning from these more elementary considerations, the book discusses the economic justification and financial history of corporate expansions and consolidations in their various forms. The last part of the book is devoted to the reasons for corporate failures and the methods employed in the resulting reorganizations of different classes of corporations.

The Appendix provides a group of eighty-six problems, selected for the most part from actual

experience and classified according to their difficulty, to serve as an aid to the teaching of corporation finance by means of class-room discussion of concrete cases.

Dolch, E. W. MANUEL OF BUSINESS LETTER WRITING. $2.25. *New York: Ronald Press, 1922.*

Dunn, Arthur B. SCIENTIFIC SELLING AND ADVERTISING. *New York: Harper Bros., 1922.*

Edie, L. D. PRINCIPLES OF THE NEW ECONOMICS. $2.75. *New York: Crowell, 1922.*

Esquerre, P. J. PRACTICAL ACCOUNTING PROBLEMS. pt., 2 lea. $10. *New York: Ronald Press, 1922.*

Farquhar, Henry H. FACTORY STOREKEEPING. $2.50. *New York: McGraw-Hill, 1922.*

Fetter, F. A. MODERN ECONOMIC PROBLEMS. 2d ed. rev. $2.75. *New York: Century, 1922.*

Fish, L. J., and D'Avesne, A. L. FRENCH COMMERCIAL CORRESPONDENCE. $1.20. *New York: Macmillan, 1922.*

Friedman, E. M. INTERNATIONAL FINANCE AND ITS REORGANIZATION. $7. *New York: Dutton, 1922.*

Furniss, E. S. FOREIGN EXCHANGE. $2.50. *Boston: Houghton-Mifflin, 1922.*

Gillette, H. P., and Dana, R. T. CONSTRUCTION COST KEEPING AND MANAGEMENT. $5. *New York: McGraw-Hill, 1922.*

Griffin, B. W. INSTALLMENT SALES AND COLLECTIONS. $4. *New York: Prentice-Hall, 1922.*

Hamilton, W. P., Editor of "The Wall Street Journal." STOCK MARKET BAROMETER. $3. *New York: Harper, 1922.*

IN this readable book Mr. Hamilton gives an analysis of the New York Stock Market and its history since 1897. It is a discussion of the theory of business cycles as set forth by the late Charles H. Dow, the founder of "The Wall Street Journal." The author maintains that the trend of the Stock Market as shown by the Dow-Jones averages is a better barometer of general business conditions than any forecasting service which takes other factors into consideration. He argues that the best knowledge and brains of the country are concentrated in forecasting the fundamental movements of the market and consequently all possible influences on conditions are contained in the price of stocks. Many interesting anecdotes of Wall Street and instances of the success of the Barometer in forecasting movements of the cycle, are introduced in the discussion. An appendix contains the daily Dow-Jones averages for Industrials and Railroads from January 1, 1897 to May 16, 1922.

Haner, Daniel J. MODERN MANAGEMENT APPLIED TO CONSTRUCTION. $2.50. *New York: McGraw-Hill, 1922.*

Haskell, Allan C. GRAPHIC CHARTS IN BUSINESS. *Codex Book, 1922.*

THE making and use of graphic charts in business is described in elementary fashion under the following general heads:

Reasons for the use of charts.
Physical, psychological, time-saving.

Kinds of charts and how made.
Line charts, plain and ratio rulings, scales, bar charts, circular percentage charts, organization charts, trilinear charts, probability charts.

How and where charts may be used.
In accounting, advertising, collections, costs, credits, financial statements, inventories, organization work, payment plans, personnel, prediction and trend, purchasing, sales, scheduling production.

The importance of accurate original data.
The information is presented in readable form and should be especially adaptable for use in training courses for employees.

Hayward, William Richart. PROGRESSIVE PROBLEMS IN BOOKKEEPING AND ACCOUNTANCY. *New York: Macmillan, 1922.*

Hayward, W. S. and White, P. with chapter by John S. Fleek and H. MacIntyre. CHAIN STORES, THEIR MANAGEMENT AND OPERATION. *New York: McGraw-Hill. 1922.* (See review on page 122.)

Henderson, Hubert D. THE COTTON CONTROL BOARD. $1.50. *New York: Oxford University Press, 1922.*

Hopwood, J. O. ANALYSIS AND CLASSIFICATION OF PERFORMANCE IN VOCATIONAL RELATIONS. $1.50. *Boston: Badger, 1922.*

Huggins, W. L. LABOR AND DEMOCRACY. $1.25. *New York: Macmillan, 1922.*

Hungerford, E. ROMANCE OF A GREAT STORE. $2.50. *New York: McBride, 1922.*

Huntington & Williams. BUSINESS GEOGRAPHY. $2.75. *New York: Wiley, 1922.*

BUSINESS Geography aims to bring out the relations between climate and geographical characteristics of the world. The analysis of these inter-relations is presented in simple and interesting form in five parts, the first of which deals with geographic influences upon business, discusses the world products in their relation to climatic factors, the effect of relief on production, the geographic characteristics of soil productivity, the varying capacity of races, as well as the geographic basis of exchange. Part 2, "Business Relations as evolved among Typical Communities" treats in a series of chapters the different types of communities classified according to economic pursuits taking up agricultural, lumbering, mining, manufacture and commercial activities. The third part, in dealing with the business of the continents, aims to trace the influence of geographic features upon present commercial developments. A more detailed consideration of topic applying to United States and Canada makes up the fourth main section of the work. The last section consists of statistical material upon population, occupation, industry and manufacture.

Hysell, H. SCIENCE OF PURCHASING. $2.50. *New York: Appleton, 1922.*

Joint Executive Committee of the Vocational Education Committees of the Pulp and Paper Industry of the U. S. and Canada. THE MANUFACTURE OF PULP AND PAPER; a Text-book of Modern Pulp and Paper Mill Practise. *New York: McGraw-Hill, 1922.*

Jones, Clement. BRITISH MERCHANT SHIPPING. $3.75. *New York: Longmans, Green, 1922.*

Karsten, Karl G. GRAPHIC REPRESENTATION. *New York: Prentice-Hall, 1922.*

Kleppner and Leseritz. ADVERTISING PROCEDURE. *New York: Prentice-Hall, 1922.*

McCoy, W. A. BUSINESS TRUST AGREEMENTS AND DECLARATIONS OF TRUST. $10. *Pittsburgh, Pa.: McCoy's Organizing Bureau.*

McKinsey, J. O. BUDGETARY CONTROL. *New York: Ronald Press, 1922.* (See review on page 120.)

McKinsey, J. O. RELATION OF BUDGETARY CONTROL TO COST ACCOUNTING. 75 cents. *National Association of Cost Accountants, 1922.*

Mayers, Lewis. THE FEDERAL SERVICE. *New York: Appleton, 1922.*

Myers, C. S. MIND AND WORK; THE PSYCHOLOGICAL FACTORS IN INDUSTRY AND COMMERCE. *New York: Putnam, 1922.*

NATIONAL FOREIGN TRADE CONVENTION. $2.50. Official report of the 9th National Foreign Trade Convention, *Philadelphia, Pa., May 10-12, 1922.*

NATIONAL INDUSTRIAL CONFERENCE BOARD. Should the State interfere in the Determination of Wage Rates? $1.50. *New York: The Board, 1922.*

NATIONAL INDUSTRIAL CONFERENCE BOARD. Wages and Hours in American Industry, July, 1914, July, 1921. $2.50. *New York: Century, 1922.*

Odate, G. JAPAN'S FINANCIAL RELATIONS WITH THE UNITED STATES. pa. $1.25. *Longmans-Green, 1922.*

Parsons, T., and Reed, Charles M. LAWS OF BUSINESS. *New York: Doran, 1922.*

Penson, T. H. ECONOMICS OF EVERYDAY LIFE. 2v. v. 1, $1.50; v. 2, $1.35. *New York: Macmillan, 1922.*

Peters, P. B. S. COMMERCIAL LAW. $1. *Southwestern Publishing Co., 1922.*

Prentice-Hall. BANK SALARIES, EXPENSES AND METHODS OF SOLICITING NEW BUSINESS. $4.25. *New York: Prentice-Hall, 1922.*

Rietz, H. L., Crathorne, A. R. & Rietz, J. C. MATHEMATICS OF FINANCE. $3. *New York: Holt, 1922.*

Rossmore, E. E. FEDERAL INCOME TAX PROBLEMS. *New York: Dodd, Mead and Co., 1922.*

MR. ROSSMORE has succeeded in his attempt to give a clear, comprehensive, yet comparatively brief, treatment of the Federal Income Tax situation as it has been left by the Revenue Act of 1921. The text begins with a statement of the changes in the Revenue Act of 1918 brought about by the Act of 1921. These are classified as (1) changes to reduce taxation, such as the repeal of the corporate excess profits tax and the reduction of surtax rates after January 1, 1922; (2) changes to remove certain inequities existing in the revenue act of 1918, such as the provisions for taxing capital gains, enforced replacements, paper profits, etc.; (3) changes to prevent the evasion of taxes, especially by eliminating profits through wash sales of securities at losses, or by gifts; and (4) miscellaneous, such as changes in exemptions, classification of personal service corporation in the same category as other corporations, etc.

Next follows a series of 334 problems, covering 410 pages, that illustrate all provisions of the law. The problems consist of a statement of assumed facts, the question involved, the an-

swer, an explanation of the solution, references to official sources wherever necessary, and an occasional author's note.

There are two good indices included. One is in the form of a reprint of the act itself with marginal references to the problems illustrating the intent of the act. Upon the whole the problems are arranged in the same order as the questions involved are dealt with in the act. There is also a good topical index of 19 pages.

Mr. Rossmore writes with authority not only as a practising certified public accountant (N. Y.), but also as a former chief of the special audit section and the consolidated returns section and lecturer of the Internal Revenue Bureau.

While the tax expert, dealing with controversial questions and detail problems will always refer to the original sources such as the act itself, and the treasury department's regulations, decisions, opinions, memoranda, etc., to seek refined distinctions to aid his client, the book will meet the needs of the average income tax payer and answer most questions that come to the accountant.

Rowntree, B. S. PEACE OR WAR IN INDUSTRY. pa. 10 cents. *Latham Lithographing and Printing Company, Bush Terminal, Brooklyn, N. Y., 1922.*

Savage, M. D. INDUSTRIAL UNIONISM IN AMERICA. $2.25. *New York: Ronald Press, 1922.*

Scovill, H. T. ELEMENTS OF ACCOUNTING LESSONS. $3. *LaSalle Extension University, 1922.*

Sheaffer, W. A. METROPOLITAN SYSTEM OF BOOKKEEPING. new ed. $2. *Chicago: Metropolitan Text-book Co., 1922.*

Sherbow, B. EFFECTIVE TYPE-USE FOR ADVERTISING. $2. *The author, New York, 1922.*

Smith, J. G., M. A., Assistant Professor of Commerce, University of Birmingham. ORGANIZED PRODUCE MARKETS. *New York: Longmans, Green, 1922.* (See review on page 121.)

Spencer, William H. LAW AND BUSINESS. v. 3. *Chicago: The University of Chicago Press, 1922.*

Spiegel, J. MODERN BUSINESS ENCYCLOPEDIA. $4. *Modern Business Cyclopedia Corporation, 1922.*

Stockder, Archibald H. BUSINESS OWNERSHIP AND ORGANIZATION. *New York: Holt, 1922.*

Stone, Gilbert. A HISTORY OF LABOUR. $4.50. *New York: Macmillan, 1922.*

Szepesi, E. COST CONTROL AND ACCOUNTING FOR TEXTILE MILLS. $10. *Bragdon, Lord & Nagle, 1922.*

Tipper, Harry. THE HUMAN FACTOR IN INDUSTRY. $2. *New York: Ronald Press 1922.*

IN brief compass Mr. Tipper "deals with the mental factors of industrial relationship, with organization conditions and with experiments of changing or modifying organizations," particularly "with the relation of the question to the practical development of industry in the more or less immediate future," in the hope that "it will present to the business man a sufficiently complete and concise analysis of the difficulties which must be met and the outlook in meeting them." Much of the book's interest is derived from the fact that it constitutes a running comment of an observant business man upon such moot topics as collective bargaining, leadership in modern industry, employee representation, fatigue, bonuses and profit sharing as well as other questions affecting wages. Though taking the viewpoint of the employer, Mr. Tipper is willing to concede that much of the labor's criticism of employers is justified and that improved industrial relations depend upon mutual understanding, forbearance and concession, not merely upon abandonment by labor of its claims.

Von Engeln, O. D. INHERITING THE EARTH; OR THE GEOGRAPHICAL FACTOR IN NATIONAL DEVELOPMENT. $2. *New York: Macmillan, 1922.*

Wallace, David. SIMPLE MINE ACCOUNTING. $1.50. *New York: McGraw-Hill, 1922.*

Walter, F. W. RETAIL CHARGE ACCOUNT. $3. *New York: Ronald Press, 1922.*

DRAWING its substance from the practical experiences of the credit managers of some of New York's leading stores, this book is not confined to a theoretical discussion of credit granting, but deals with the every-day routine and problems of the credit department of a retail store. It not only covers the considerations, methods, and legal aspects of credit, but also points out the possibilities for active business building by the credit department. Although its viewpoint is broad, details are not slighted, the various forms in use and mechanical helps are described. Obtaining the cooperation of banks and financing accounts through them are taken up in the final chapters. Although based on the practises and experiences of large stores, the volume undoubtedly provides helpful material both for credit men of smaller stores, and for students.

Ward, W., LL. B. AMERICAN COMMERCIAL CREDITS. $2.50. *New York: Ronald Press, 1922.*

As a result of the cancelations and repudiation of existing contracts following the collapse of the inflated prices of 1920, the New York Bankers Commercial Credit Conference of 1920 was called. This conference endeavored to secure the adoption of uniform terminology in dealing with letters of credit and to devise credit instruments which would be proof against misunderstandings and confusion.

On the basis of an historic and international background, Mr. Ward presents the conclusions and recommendations of the conference. His explanation of commercial credit practise furnishes a basis for the interpretation of the proposed standard forms of commercial letters of credit.

In the last two chapters of the book, Mr. Carl A. Mead describes the nature of the rights and obligations created by documentary letters of credit and the performance that may be expected thereunder.

Watkins, Gordon S., Ph. D., Assistant Professor of Economics, University of Illinois. AN INTRODUCTION TO THE STUDY OF LABOR PROBLEMS. *New York: Crowell, 1922.*

"THE problems of industrial relations are the resultants of ascertainable causes, of material and subjective forces that function persistently in the evolution of industrial society. These problems cannot be understood apart from the experiences of the past and the conditions of the present." In the presentation of his thesis the method of the author is to give first, a statement of the labor problems now present in industry with an exposition on their development; second, an analysis of these problems; and third, a discussion of the attempts made to solve the problems together with a description of the agencies and methods of re-adjustment now available. The author approaches his subject with a background of experience as a wage-earner in the mining and machine industries. His book covers among other things: the determination of wages and hours of labor, child labor, women in industry, unemployment, labor turnover, immigration, industrial unrest, a discussion of labor organizations and employers' associations, profit sharing, industrial education, socialism, labor legislation, and social insurance.

Willard, R. D. SYSTEM BUILDING AND CONSTRUCTIVE ACCOUNTING. $4. *New York: McGraw-Hill, 1922.*

Willis, H. P., and Edwards, G. W. BANKING AND BUSINESS. $3.50. *New York: Harper, 1922.*