

**CAUSE AND CONTROL
OF THE BUSINESS CYCLE**

by

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ACKNOWLEDGMENTS

THE publication of the first edition of this text in 1932 naturally led to many new contacts with other students both amateur and professional. In addition, my work with American Institute for Economic Research has brought an ever-widening circle of acquaintances and friends, much of whose correspondence has dealt with one aspect or another of the business-cycle problem. Consequently, it is impossible to acknowledge all the contributions by others to my thought and writing on this subject. I am grateful to all who have troubled to give me their views, especially to those who have requested more thorough analyses of various aspects of the problem. They deserve the credit for much of the improvement in the later editions.

My associates at the Institute have been especially helpful. They subjected themselves to an elementary course in business-cycle theory based on the revised ten sections of this book. I am sure that it is a better product because of their study and helpful criticism. Of course, they should not be blamed for any failures to achieve the goal that all serious followers of scientific method strive to attain.

The preparation of a comprehensive and useful index for a text such as this requires both knowledge of the subject matter and much painstaking effort. I am particularly grateful to Helen Upton for her contribution to this part of the work.

The Cleveland Trust Company was good enough to permit reproduction of the chart showing business activity in the United States since 1790.

E. C. Harwood

PREFACE

THE first edition of this study was published in 1932, and many changes have been made in the money-credit system of the United States since that year. Furthermore, business-cycle theory has been improved in recent decades, especially by such noteworthy contributions to the subject as Dr. Haberler's *Prosperity and Depression*, Dr. Marget's *A Theory of Prices*, and the publications of the National Bureau of Economic Research. Therefore rewriting much of this text has been necessary in order to keep it up to date. However, the basic principles remain unchanged; and events of the past three decades have strengthened the evidence that supports those principles.

This text has been written primarily for readers whose education or practical experience provides the background for an understanding of this nontechnical exposition. However, there are certain features of it that may be of interest to professional economists because of new ideas or changed emphasis on familiar aspects of the subject. As a courtesy to the experts who are more interested in technical aspects of the latest developments in business-cycle theory, I have included a special introduction. This presents the more technical parts of the argument, gives page and section references to new ideas or changed emphasis on older ideas, and discusses the relation of this work to the writings of others.

A brief discussion of the basic principles of the money-credit system and of certain technical terms has been included as Appendixes A, B, and C. It will be of interest to readers who wish to explore the subject further.

E. C. Harwood

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INTRODUCTION

THIS study is intended primarily for readers who are not familiar with the many volumes that have already been written on the subject of business cycles by both professional and amateur economists. However, there are some features that will be of interest to the experts in this field because of the new ideas presented or changed emphasis on older ideas. For the convenience of professional economists, technical features of the new ideas, the changed emphasis on older ideas, and the relation of this work to several business-cycle theories are discussed in this introductory section. Arranging the material in this manner has made possible eliminating most of the footnotes that would otherwise be necessary and to concentrate here the more involved technical discussions that are not essential from the layman's point of view. Readers who are not interested in these aspects of the problem should immediately turn to Section I.

The first feature of this work that will probably be of interest to professional economists is the title. "Cause and Control of the Business Cycle" unfortunately carries the implication that there is one primary and original cause, and that there is one all-important method of control. In spite of this drawback, the title has been continued unchanged in successive editions simply because I have been unable to think of a different title that would convey to most readers the general content and purpose of the work without introducing too many additional words and phrases. However, those students of the subject who have already worked in the field certainly have every right to ask what is meant by "cause" and by "control" of the business cycle.

The dictionary defines cause as "that which occasions or effects a result; the necessary antecedent of an effect," and the word frequently is used in this popular sense. However, from the scientific standpoint, this definition is unsuitable, first because it implies that a result can be considered the effect of a single preceding factor or influence, and second because it carries the implication that a "cause" has some unique motivating power that enables it, without outside assistance, to produce the result. These are serious defects, because the "causes" of any given phenomenon seem to multiply as our powers of observation improve, and to select one of many necessary antecedent conditions and ascribe to it a unique capacity to produce the event is an unscientific and inaccurate description of reality.

Therefore, in using the word "cause" I have intended to imply no more than one of the conditions, in the absence of which the business cycle in its extreme form as we know it today would not exist. This immediately raises the question, Why seize upon but one of many causes for a discussion of this character? The answer is that this particular condition-precedent, or cause, of the business cycle seems, among those recognizable as such, to be the one that will probably be most easily controlled or regulated. In fact, inasmuch as the particular cause here discussed involves abuse of an important part of the economic mechanism, an attempt to deal with this cause will involve *less, rather than more*, complicated regulation of our economic system.

It should not be supposed that I refuse to admit either

the existence of many other important causes of the business cycle, or the possibility of exercising some control by dealing with them. For example, even if not immediately probable, the chemists and biologists may eventually perfect a stabilizing injection of some kind that will modify the cycles of human conduct so that individuals, either singly or en masse, will no longer suffer those periods of unbalance when they either optimistically hope for more than they reasonably can expect, or pessimistically fear much worse events than will probably happen. However, any suggestions for controlling the business cycle by dealing with this cause presuppose circumstances much different from those that exist today, at least in the United States.

Control over those causes related to individual saving or involving the overall planning of new investment for business can be undertaken only by a government having far more power to interfere with the freedom of individuals than the United States Government has at this time. Such experiments are being undertaken in England and France, thus far without any degree of success that would encourage imitation. Before going farther down that road of doubtful destination, a survey of other possibilities is certainly in order, and this study discusses one of those possibilities.

The word "control" is perhaps unfortunate, in that it may convey to some readers the implication of close and precise regulation; to some it may even imply complete avoidance, as in the case of the chronic inebriate who "takes the pledge," and for the time being "controls" his appetite for strong drink. Presumably, no economist and few business men would expect that the business cycle could be controlled to that extent.

Unless all the causes of the business cycle are closely controlled, it is idle to suppose that manipulation of any one antecedent condition can provide a degree of control that would wholly eliminate the business cycle. In order to exercise the wisdom and restraint that may control one of the causes of the business cycle, a criterion for action is needed, and such a criterion apparently would depend, to some extent at least, on a moderate fluctuation of business activity. Fortunately, the criterion of control discussed in this text is largely independent of cyclical movements in business. However, until a degree of understanding and a perfection of statistical data not now existing become available, I do not suppose that the business cycle can be eliminated. Therefore, by control I mean *some degree* of control, which probably would eliminate the extreme aspects of the boom and depression stages of the business cycle, although in the course of time and with continued scientific research a much closer degree of control might be obtained by the means here discussed.

NEW IDEAS

The core or central thought of the ideas discussed in this work is an old one, dating at least as far back as John Law of "Mississippi Bubble" fame. Adam Smith apprehended its significance. The basic idea is relatively simple, and it has been rediscovered time and time again by both professional and amateur students of monetary

theory. Therefore, and of course regardless of the degree of originality in the basic idea when first developed from my personal viewpoint, professional economists will realize that the main line of thought presented is not a new contribution to scientific knowledge of the field. However, there are certain changes of emphasis and perhaps one or two new ideas that professional economists will wish to consider.

The Index of Inflating offered is believed to be a new contribution to the scientific advance in this field. Judging by practical experience with it during the past four decades, it seems to have unique barometric significance with reference to cyclical movements. In other words, it reflects changes in one of the important conditions precedent to business-cycle changes. This strengthens the belief, which I first entertained nearly 50 years ago, that this Index might be used for the purpose of controlling the business cycle, that is, controlling it in the sense of mitigating the harmful extremes. Section IV explains the construction of this Index and presents its record for a period of 60 years. (More detailed information, including photostat copies of the detailed computations, can be obtained by application to American Institute for Economic Research.)

A second new idea, or at least a more complete development of an older idea, will be found in the explanation of the circumstances that made stable commodity prices possible from about 1922 to 1929. Many economists no doubt realized, during the last stages of the New Era, that commodity prices were being supported above what might have been considered their normal postwar trend by more and more inflating. A few economists who apparently failed to give any weight to this possibility made some widely-publicized and unfortunate predictions that emphasized the desirability of remembering that price movements are always relative and only sometimes absolute. The evidence that their assumptions were erroneous has been sufficiently convincing, but I have not seen elsewhere a satisfactory explanation of the precise manner in which the use of inflationary purchasing media may cause a relative but not an absolute rise in prices.¹ This explanation will be found in Section VII.

For any writer to offer new definitions of inflation and deflation would be virtually impossible. These words have been made to cover so much territory by so many different writers that it might almost be said they are spread like a vast circus tent over the entire fields of monetary and price theories and some other territories as well.

Consequently, the greater accuracy of specification offered in Section V may prove interesting to professional economists. The words "constricting" and "reflating" have likewise been used, and these names have been so applied that, together with the terms "inflating" and "deflating," all of the possible situations involved are clearly differentiated by appropriate names.

¹ Credit is due to Ralph E. Flanders and Sanford E. Thompson for this explanation. Not satisfied with my assurance that inflating could cause a relative, rather than an absolute, price rise, they quite properly requested a detailed demonstration of the process. That my explanation fits the facts as they occurred during the 1920's cannot be proved, but it is at least in accordance with as many of the facts as can be observed. It explains how that which apparently happened might have happened, and it therefore removes one reason for doubting the explanation given.

THE INVESTMENT VS. SAVINGS RELATIONSHIP

The question of the relationship between savings and investment has been discussed by monetary theorists for many years. However, the publication of Dr. John Maynard Keynes' fundamental equations drew the spotlight of attention to the I-S (investment minus savings) factors in the situation.

My first reaction to the Treatise was described in the 1932 edition of this study. The fundamental equations, provided the variables functioned as mathematical variables in an equation of this character, seemed to offer one method of throwing light on the subject. However, Dr. Keynes, in differentiating between his work and the theories of Hobson, Foster and Catchings, et al., said "...on my theory, it is a large volume of saving which does not lead to a correspondingly large volume of investment (not one which does) which is at the root of the trouble." In saying this, he certainly implied that I and S (investment and savings) used in the fundamental equations were to be considered independent variables. Unfortunately, his subsequent definitions completely destroyed the independence of these alleged variables.

That his definitions were not satisfactory was apparent, but I assume that they would be corrected, and that observation of the facts would lead Dr. Keynes to correct his assumptions regarding the failure of savings to be invested. However, such did not prove to be the case. Dr. Keynes apparently preferred to retain his definitions of investment and savings, even at the cost of nullifying whatever usefulness there may have been in his so-called fundamental equations. However, his difficulties have been so thoroughly analyzed by Dr. Marget in *A Theory of Prices* that a further discussion of them here is unnecessary.

Although the discussion in economic journals since early 1932 has conclusively demonstrated that investments and savings, as defined by Dr. Keynes, are equal, in fact are the same thing, savings and investment, used in a different sense, may not be equal, and their difference may be of economic significance. This point is well brought out by Dr. Haberler when he says, "Thus the money invested today is financed partly by savings out of income earned yesterday and becoming available today, and partly by inflation."² However, even he seems to have overlooked the fact that, although an excess of current monetary investment in relation to the supply of current savings must be financed from inflationary sources, this is not the same thing as saying that all purchasing media from inflationary sources must be used to create an excess of monetary investment in relation to current saving. It may be so used, but need not necessarily be so used. This point is discussed below.

PURCHASING MEDIA VS. PURCHASING POWER

In the first edition of this publication, the phrase "purchasing power" was used to include both currency that may be passed from hand to hand as exchanges are accomplished, and the total of demand deposits that can be drawn upon in the usual manner by check. Some economists have used the word "money" in this broad, inclusive sense also. On the other hand, one prominent

² Haberler, G. von: *Prosperity and Depression*. Geneva: League of Nations Publications, 1937, p. 198.

group of money-credit economists restricts the use of the word "money" to the money commodity, gold, or its representative paper such as the warehouse receipts called gold certificates, formerly in circulation. At the other extreme there are some economists who use the word "money" or sometimes the phrase "purchasing power" to include time or savings deposits in addition to currency and demand deposits. Some writers would even include promissory notes and book credits, or charge accounts, even credit cards, as part of the purchasing-power total.

During the past few years, there has been a more common use of the phrase "purchasing power" for an even broader range of things. Individuals who have wealth in almost any form that might conceivably be sold or exchanged are said to have "purchasing power." This viewpoint greatly broadens the ordinary meaning of the phrase, and it is perhaps losing its usefulness for scientific purposes on that account.

Because the word "money," used without a train of appropriate modifiers following in its wake, has for more than a century been unsatisfactory for scientific discourse, and because the phrase "purchasing power" seems to be gradually acquiring a broader penumbra of meaning than it carried a few years ago (or perhaps because I now have a better grasp of its use by various other writers) it has seemed advisable to use the phrase "purchasing media" to designate the total of hand-to-hand currency plus checking accounts available to the public. In spite of the disadvantages that must always attend the use of a less familiar phrase, "purchasing media" seems to be an especially appropriate name for the things referred to.

The term "purchasing media" refers to the currency in circulation plus those credit instruments that are also immediately available for use in their existing forms (from the viewpoint of purchasers), that are immediately acceptable (from the viewpoint of the sellers), and that involve no continuing obligations for a more or less protracted period after the purchase and sale has been accomplished.

The reasons for using the phrase in this particular manner will probably be of especial interest to professional economists.

The qualification, "immediately available (from the viewpoint of the purchaser)," makes a distinction between demand deposits and time or savings or other forms of wealth or claims upon wealth that can be converted either within a short or long period into a generally accepted purchasing medium. An important group of monetary economists has argued that time or savings deposits are not essentially different from demand deposits, because they can, as a general rule, be quickly converted to demand deposits or hand-to-hand currency. Therefore, the reasons for this distinction must be carefully described.

DISTINCTION BETWEEN TIME AND DEMAND DEPOSITS

If time and savings deposits are not to be differentiated from demand deposits in monetary theory, why should not an asset such as the United States savings bond likewise be included? These bonds can be converted to a generally accepted purchasing medium, because that is part of the contract in the bond. On the other hand, this is not part of the contract involved in the bank-versus-savings-depositor relationship. On the contrary, the bank has the right (even though practical considerations may prevent its exercising this right in most instances) to delay the conversion that may be requested by the depositor

for a period that varies in different localities. If the possibility that *some* time or savings deposits may be converted to demand deposits is justification for failure to differentiate between checking accounts and time deposits, then there should likewise be no differentiation between checking accounts and United States savings bonds. If United States savings bonds are to be included in the total, why not also include some irreducible minimum value for all marketable securities; and if these are to be included, why not likewise include some irreducible minimum value for all wealth in whatever form it may be at any time? In other words, why not regard the total of purchasing media available to the public as being the total liquidating value of all wealth in existence?

Some economists may answer this question by asking, "Why not consider the total purchasing media available to the public the same as the total liquidating value of all wealth and claims on wealth?" To such readers I suggest more careful consideration of the phrase "liquidating value." Liquidating value, as used here, refers to the dollars obtainable by selling the article. Surely, including with the dollars (currency and checking accounts) available for making purchases all articles that may be offered for sale inextricably confuses supply and demand, or potential supply and demand, in the market places of our economic society.

The only clear dividing line appears to be that between assets immediately available and generally acceptable as purchasing media, and those that are neither immediately available nor generally acceptable. If such a distinction cannot be made, both in theory and in practice, any attempt to control the volume of purchasing media must somehow attempt to regulate the holding, liquidation, and exchange of all forms of wealth. Fortunately, there are many more reasons than this one for believing that purchasing media, as I have applied the phrase, and all other wealth or claims upon wealth should be differentiated, i.e., designated separately.

One of the facts that emphasize the value of this distinction is that purchasing media can be increased or decreased in total amount either by Government acting alone, by Government in cooperation with a banking system, or by business interests in cooperation with the banking system (or by the banking system in cooperation with business interests, depending on one's viewpoint as to the initiating factor), whereas this is usually not true of time or savings deposits, securities, wealth in general, and miscellaneous claims on wealth.

Some economists would perhaps raise a question at this point, and suggest that "a considerable proportion of the expansion of bank deposits against the government debt is represented by time and savings deposits," an assertion that came to me some time ago in a letter from one of the Nation's leading monetary economists. However, the available facts, which are nearly all-inclusive and of a high order of accuracy, appear to invalidate this assumption. During the three-year period, 1934 to 1937, there was the greatest expansion of bank deposits that had ever occurred up to that time. As every student of the subject knows, this was primarily a result of monetization of Federal deficits by the commercial banks of the country. In spite of the more than \$10,000,000,000 increase during a relatively short period, time and savings deposits did not increase so rapidly as they did during the three-year period from 1924 to 1927. It may be argued that the New Era inflation had started by 1924, and that

the increase in time deposits from 1924 to 1927 may therefore substantiate the assertion made. However, reference again to the facts in the case reveals that time deposits did not increase so rapidly from 1924 to 1927 as they did from 1914 to 1917, just prior to the World War I inflation. Moreover, the rate of increase of time deposits after World War II was less than the rate after World War I, in spite of the proportionately greater monetization of Government debt during World War II. The facts suggest that the actual course of events may have been precisely the opposite to that which has been assumed by theorists who have not stopped to investigate the readily available facts.

Another factor that perhaps strengthens the argument for differentiating between demand and time deposits is the attitude of the typical depositor in each instance. At the time of making the deposit, the individual or business that adds to its checking account presumably expects to enter the market within the usual income period and make use of that purchasing media. On the other hand, the individual or business that increases its time deposits, in effect, says, "We do not propose to use these funds as purchasing media within the normal time of turn-over for our checking account." Furthermore, a substantial portion of demand deposits is traceable to depositors who have sought loans because they wished to use purchasing media before their normal incomes could provide an adequate supply. On the other hand, the attitude of the individual or business making a time deposit is precisely the reverse, in that he, in effect, says to the bank, "You lend or spend this money for me, because I do not wish to use it for an indefinite period."

Another important difference is found in the fact that time or savings deposits presumably will accumulate indefinitely. They are the record of savings made available to the commercial banks for investment, and therefore have grown from an insignificant proportion of bank liabilities and probably will continue to grow in relation to demand deposits until, considering all banks as a group, time or savings deposits will be by far the major portion of their liabilities. Confusing this long-term development with the changes in purchasing media that apparently are related to business cycle movements would be a mistake.

Failure to differentiate between demand deposits and time or savings deposits leads to serious confusion analogous to that which would result from a failure to differentiate between plus and minus signs in an algebraic equation. Time or savings deposits, although they usually can be converted to demand deposits or currency within a relatively short period of time, must be considered on the opposite side of the purchasing media equation, under those circumstances. In other words, they occupy the same position as does a share of stock, for example, which the owner places on the market for sale. Time or savings deposits, like other claims on wealth and articles of wealth itself, can become demand in the market, from the viewpoint of items available for sale, only because the owners of the deposits or other wealth involved can first exchange their holdings for cash, either in the form of checking accounts or currency. In short, time or savings deposits are merely the records of the fact that purchasing media were turned over to savings banks for investment. Except for minute quantities, insignificant in relation to the total, all such funds have been promptly invested (i.e., spent for capital goods) and thus are no longer in the possession of the banks concerned. The assets acquired in the process (bonds, mortgages, etc.)

belong to the depositors, and the savings deposits are merely the records of the depositors' respective shares in the assets held.

Although purchasing media, including both checking accounts and currency, make possible an effective demand for goods in the market place, the total of purchasing media is the supply of cash or the equivalent available in the market from the viewpoint of those who have goods or other assets to liquidate. To fail to differentiate between time and demand deposits is to ignore the difference between demand and supply. It is to treat as though they had like signs items that necessarily have opposite signs in any broad equation of exchange sufficiently comprehensive to set forth the pertinent facts. If for no other reason, this situation alone is sufficient to make a differentiation between demand deposits and time or savings deposits essential.

RELATION TO OTHER CYCLE THEORIES

Students of business-cycle theory will of course wish to know what relation the description and demonstration presented in this study have to those offered by a host of earlier and contemporary writers. Of all the various cycle theories that I have examined, the synthesis offered by Dr. Gottfried von Haberler³ most closely parallels the discussion given in this volume. There are a few significant differences, which will be discussed in subsequent paragraphs.

Of the various other theories that have been offered, two variations of the oversaving theory have held an important place in economic policies and controversies during the past few years.

During the earlier part of the great depression, the oversaving theorists who also argued that excess saving led to overinvestment were in the spotlight. A typical example of these theories was offered by Foster and Catchings here in the United States. There were, of course, predecessor writers who adopted a similar viewpoint both here and abroad. This variant of the oversaving theory seems to have been completely discredited, and it probably never did have a respectable following among the leading monetary economists in this country.

However, the other variant of the oversaving theory, that offered by Dr. Keynes in England and supported by Dr. Moulton's analysis for the Brookings Institution in this country, has had a longer life and has attracted many more followers among the professional economists. These theories are analyzed briefly in Section VIII.

Readers who still are not convinced that the oversaving theory of the business cycle should be considered a dead issue will find the discussions by Dr. Marget⁴ and Dr. Villard⁵ especially pertinent. The former has made an important contribution to money and price theories, which should do much to eliminate the confusion and divided councils that followed the publication of Dr. Keynes' *Treatise on Money*. Dr. Villard, in a series of important articles, has first demonstrated that the statistical basis for Dr. Moulton's theories is seriously in error and hopelessly inadequate, and has then followed this demonstration by a theoretical analysis of Dr.

³ Haberler, G. von: *Prosperity and Depression*, op. cit., Part II.

⁴ Marget, A. W.: *A Theory of Prices*. Vol. I and II New York: Prentice-Hall, Inc., 1938.

⁵ Villard, H. H.: *Dr. Moulton's Estimates of Savings and Investment*. American Economic Review, Vol. XXVII, September 1937.

Moulton's logic, which effectively disposes of that version of the oversaving theory.

That similar crude notions will rise, Phoenix-like, from the ashes of these discarded theories is to be expected. As with perpetual motion schemes in the mechanical world, there are always new discoverers who breathe life into these notions whenever surface indications are propitious to their resurrection. Nevertheless, however much the arguments of Foster and Catchings, Dr. Keynes, Dr. Moulton, and others have contributed to more accurate specification or naming and the better development of worthwhile descriptions of economic developments, the basic principles of the various oversaving theories of the business cycle should now be considered discarded hypotheses.

DR. HABERLER'S SYNTHESIS

The first point of importance in Dr. Haberler's "Synthetic Exposition" is his apparent belief that inflating that merely prevents a fall in prices will not necessarily lead to the same kind of crisis and depression as that which usually follows inflating involving an absolute rise in prices. In discussing Hayek's and related theories with reference to the point mentioned, he says ". . . the undertaking to prove this latter point rigorously has not been made good."⁶ The necessary demonstration is attempted in Section VII, and unless there is an error, it should meet Dr. Haberler's criticism.

In discussing Wicksell's theories⁷, Dr. Haberler says, "In a progressive economy, where the volume of production and transactions rises, the flow of money must be increased in order to keep the price level stable. Therefore, the rate of interest must be kept at a level low enough to induce a net inflow of money into circulation. The rate which stabilizes the price level is below the rate 'at which the demand for loan capital just equals the supply of savings.'" This important comment seems to imply that Dr. Haberler considers an inflationary increase of purchasing media essential in order to prevent a downward spiral of prices in the long run. (Of course, inflating is here used in the sense indicated in Section V.) This seems to overlook two important sources of new purchasing media. In the first place, there is the new gold produced that becomes available for monetary purposes. (Presumably monetary economists understand that, even though deposited at Fort Knox, Kentucky, this gold circulates in the form of checking accounts or paper currency.) Secondly, there is no reason why commercial loans should not increase as increased production is made possible by the growing capital facilities characteristic of a progressive economy. Unless it can be shown that these sources of purchasing media do not provide an adequate supply to maintain a satisfactory equilibrium, it is difficult to see why more purchasing media from inflationary sources should be needed.

I realize that some economists consider periodic inflating essential to a progressive economy, apparently because they believe that a long-term tendency toward stagnation would result if the stimulating effects of artificially easy money did not exist from time to time. However, this seems to be a less accurate analysis of the situation than that offered by Dr. Haberler. If the capital equipment of an economic society can be increased, it surely can progress, at least in the sense in which the

word "progress" is used by economists in this instance. The argument that the additional savings needed to augment the supply of capital equipment will cause a reduction of consumer spending and thereby defeat its own purpose, should be relegated to the storehouse of discarded theories with its companion-in-arms, the Foster and Catchings plan for permanent prosperity.

A third feature of Dr. Haberler's synthesis that deserves brief discussion is his apparent assumption that savings are not invested until a later time interval than that in which the spending of income used for consumption purposes occurs. Thus he says,⁸ "An increase of saving we have found normally exercises a deflationary effect at the moment of its appearance." I believe that this is a questionable assumption, especially inasmuch as it cannot be said to be "found" by an examination of the facts. If increased saving is to have a deflationary effect, it must be because the funds thus made available for investment are not promptly used. This necessarily implies that during a period when savings are increasing, the cash balances held by savings banks and life insurance companies will be increasing. However, this apparently has not occurred during those periods when the increase in the rate of saving has been marked. Evidently, those agencies that customarily receive savings tend to keep certain minimum cash balances from which expenditures for new investments are made as rapidly as new savings are placed in the care of the agency concerned. In other words, from the available facts, it would be much more reasonable to assert that the savings-investment process is a practically instantaneous one, rather than that it involves any time lag. In spite of the plausibility of the time lag assumption, saving clearly does not result in a postponement of demand for goods. That it may cause a demand for a different kind of goods is readily comprehensible, but there appears to be no evidence to show that an absolute decrease in the demand for goods in the market place during any one period of time results from the normal functioning of the savings-investment process.⁹ (Of course, after there has been a breakdown of normal economic relationships as a result of the collapse of a preceding inflation, the normal investment-savings relationship may no longer function smoothly. However, something that occurs *after* the breakdown can hardly be used to explain the decline from prosperous conditions.)

⁸ *Ibid.*, page 216.

⁹ This aspect of the matter has been discussed in an Institute Bulletin (Book Review Supplement, December 12, 1938) as follows:

"The truth of the matter apparently is that saving does not result in a postponement of demand for goods; but, on the contrary, and under normal conditions, leads to an equal or greater demand for goods and a greater demand for labor, especially the services of those in the building and capital equipment trades. Savings do not cause a slower turnover of checking accounts, but a much more rapid turnover, because at least one additional transfer of funds occurs for the saved purchasing media pertaining to any particular income. Consider, for example, the case of John Jones, who may either spend all of his current income or save part of it. If he chooses to spend it all, the dollar total of his income during any particular period, say for example one month, appears in its entirety in the market for goods. If he chooses to save part of his income, that portion is instantaneously, or practically instantaneously, transferred to others, perhaps workers in the building trades, who likewise bring it to market without any unusual delay. It follows that 100 per cent of John Jones' income still appears in the market demanding goods.

"That the saving process does ordinarily result in an

⁶ Haberler, G. von: *Prosperity and Depression*, op. cit., p. 49.

⁷ *Ibid.*, page 33.

A fourth important feature that should not be overlooked is that in Dr. Haberler's synthesis, special emphasis is placed on the use of inflationary purchasing media for new investments. In the light of the discussion of this subject during recent years and the facts presented in this book and elsewhere, it is simply incredible that anyone should deny the possibility of inflationary purchasing media being used as suggested. However, it is one thing to assert that *some* inflationary purchasing media may be so used, and something else to suggest or imply that such a use is the primary and perhaps the *only* means by which the injection of inflationary purchasing media may lead to the familiar business cycle phenomena.

Of course, new investments may be so defined as to include not only net additions to capital equipment, building, etc., but net additions to inventories as well. Surely, in view of the 1920 boom and subsequent collapse, the phenomenon of a business cycle exaggerated by an inventory speculation financed by inflating should be familiar to all economists.

Inflationary purchasing media also may be used directly for the purchase of consumer's goods. For example, the purchase of new automobiles on the installment plan, unless there are current savings available for the banks to loan to the finance companies involved, probably will require the use of inflationary purchasing media. (See also Section VII.) These will be brought into existence by the commercial banking system's credit extensions to the finance companies. Other examples of consumption purchases augmented by the availability of inflationary purchasing media are many and varied.

When a large proportion of the inflationary purchasing media created during a period of prosperity is used for new investment in plants and equipment, the depression

instantaneous release of funds to the market can readily be demonstrated. If this were not so, we should find, during a period when savings were increasing, that the cash balances of life insurance companies and savings banks were steadily growing larger. The fact that, in spite of ever larger receipts from policyholders and savings depositors, the cash holdings of these institutions remain more or less unchanged proves beyond a shadow of a doubt that the savings process introduces at least one additional instantaneous turnover of the funds involved. The cash holdings of various institutions such as life insurance companies and savings banks may be likened to a reservoir, from which the outflow is so regulated that it approximately equals the inflow. Therefore, and from the viewpoint of the system as a whole, it may be said that there is no time interval between the inflow of a specific quantity of water (purchasing media) and the outflow of a like quantity.

"It will be seen that, if a given dollar total of incomes reaches the market for goods within a certain period, say one month, the turnover for the deposits pertaining thereto will be 12 times annually. If part of that income is saved, say 25 per cent of it, and this is detoured through the normal savings-investment process, there will usually be at least two turnovers of this amount in addition to the normal turnover when the market place for goods is reached. That is to say \$25 saved from a \$100 monthly income will not prevent the normal turnover of the \$100 as it demands goods in the market place, but will add to that normal turnover two disbursements of \$25 each, thereby increasing total debits to checking accounts within the one month period to \$150, instead of \$100. Obviously, in the record of deposit accounts turnover, this would mean a turnover of 18 times annually, rather than 12. It seems highly probable that this is the true explanation for the higher turnover of bank deposits during the early 1920's (even before there was any speculative boom); and, if this is even partly true, our difficulty is not that there is too much saving and too little investment, but that there is not enough saving, and therefore not enough investment. As to why there is not enough saving, that is of course another question; but it is probably in part a result of diminished incomes, high taxes, artificially lowered money rates, and fears of inflation. This is a problem which might well be given more serious consideration by our money managers."

that follows may be long and extraordinarily difficult. Excess inventories in the hands of wholesalers and retailers, and even the forward purchasing by consumers aided by installment credit plans, apparently have not, in the past at least, anticipated future requirements for as long a period ahead as have some of the investments in plant and equipment that have been financed by inflationary purchasing media. Therefore, an inflationary boom during which new investment greatly exceeds the current rate of saving probably will be followed by a long-drawn-out and painful liquidating process. For that reason alone, it no doubt deserves more careful scrutiny, and more effort to avoid it is justified. However, overlooking the other possibilities would be a serious mistake.

In pointing out that inflationary purchasing media need not automatically be used for overinvestment in plant and equipment (although part probably will be so used when it becomes windfall profits to business, if not earlier) I do not imply that this lessens the value of the Index of Inflation discussed in this work. On the contrary, the excess of investment-type assets owned by the commercial banking system in relation to the savings-type liabilities, or at least marked changes in the relationship during a short period, are definitely and closely related to the degree of inflating. I am simply pointing out that the man who obtains inflationary credit by means of, say, a real estate mortgage loan that is greater than the supply of current savings available to the bank involved, may conceivably use the proceeds of his loan to buy a new car, a new home, a fur coat, or any of a hundred other things rather than new plant and equipment for his business.

Before turning from this aspect of the discussion, mention should be made of the "acceleration" principle and the phenomenon called "derived demand." These have been well explained by Dr. Haberler and by other writers, as most monetary economists know. In general, I concur with Dr. Haberler's exposition of this aspect of the problem, and fully agree that it has an important place in a technically complete description of the business cycle. However, it has hardly seemed of sufficient importance to warrant extended discussion. Every business man would recognize it, because he is continually basing his calculations on that principle, and to anyone who has had contact with the physical sciences, so called, certain relationships are automatically assumed in any problem involving acceleration or deceleration. In short, to those who live in the business world and to those who are familiar with natural relationships, the phenomenon of derived demand is too commonplace to require elucidation.

There are at least three other groups of economists who have developed theories similar to the synthesis offered by Dr. Haberler and the basic principles discussed in this text. One of the most noteworthy of these contributions is *Managing the People's Money*, by Dr. Joseph Ernest Goodbar. This scholarly contribution (which, by the way, provides a brief analysis of Keynes' fundamental equations in an appendix) includes an excellent discussion of Bank of England policy.

The analysis by C. A. Phillips and others¹⁰ parallels the discussions or at least applies the same basic principles that are applied in this text. However, it presents a much more comprehensive exposition of banking relationships

¹⁰ Phillips, McManus, and Nelson, *Banking and the Business Cycle*. New York: Macmillan Co., 1937.

than I have attempted to offer here. Economists presumably are familiar with this work, but it is not too technical to be read with profit by most businessmen.

The disciples of the late H. Parker Willis, especially Dr. Ralph West Robey, have in general reached conclusions similar to those presented here. Their approach is somewhat different, inasmuch as they think primarily in terms of the proper utilization of demand deposits. In other words, they regard commercial self-liquidating loans and cash as the proper assets to balance the demand

deposits of a commercial bank. However, an equivalence of investment-type assets in a banking system in relation to the total of savings-type liabilities reflects the same situation. This is so because total assets of course equal total liabilities, and therefore the difference between investment-type assets and savings-type liabilities must be exactly the same dollar amount as the difference between automatically self-liquidating assets plus cash and demand-type liabilities (with minor exceptions that do not affect the basic principle).

I.

THE PROBLEM

THE BUSINESS CYCLE AND ITS EFFECTS

THE business cycle has been a recurring phenomenon for many years past. Its course can be traced with more or less precision almost to the earliest beginnings of the present economic system. In other words, it is an accompaniment of a social organization that involves specialized production, exchange, and a money-credit mechanism, that is, a banking system. Only in recent decades, however, especially during the present century, have there been comprehensive studies of the effects of the business cycle.

Quantitative analyses presenting the observable aspects of cyclical phenomena in tabular and graphical form were first made on an elaborate scale by Dr. Wesley C. Mitchell. Since his early contributions to the field, however, there have been many others, so that today there is a wide choice available. Inasmuch as the various statistical compilations and graphical portrayals of business activity, prices, and other data are similar, only a few of the many different indexes have been reproduced here.

The first that seems advisable to consider in this attempt to determine the nature of the problem is the accompanying Chart I, "Fluctuations in Business Activity Since 1790," published by The Cleveland Trust Company. The most striking feature of this chart is the course of business activity, which has varied over a wide range above and below a long-term trend. Also included on this chart is the course of commodity prices, based on the level of 1926 as 100. Although wholesale prices have tended to rise and fall with business activity, the most marked movements have occurred during the few major wars in which this country has been engaged.

To present the record during recent years in greater detail, Chart II portrays the Federal Reserve Board index of industrial production, adjusted by the Institute for long-term trend The Bureau of Labor Statistics' Index of Commodity Prices, from 1914 to date, is shown in Chart III. During this period, at least, the two indexes have obviously moved more or less together. Other records, not reproduced here, indicate that such has been the situation as far back as adequate data can be found.

Finally, in order not to overlook the fact that business activity has increased over a long period of years, an index of industrial production, adjusted for seasonal variation but not for long-term trend, is shown in Chart IV. Presumably, the reader is familiar with indexes of this character, inasmuch as they are found in almost every business or trade periodical from time to time and even in the financial sections of the daily papers in large cities.

With the facts thus recorded in graphical form, the problem stands out in full relief. An explanation of the reason for the peculiar fluctuations in business activity, security prices, and prices in general is desired. In other words, why booms and depressions? How is it possible that, although population is growing at a relatively stable rate, and although the wants of the populace are presumably not subject to wide variations in total quantity, there are nevertheless such extraordinary fluctuations in business and prices? This puts the question

in general terms, but it may be worth while to mention some of the more detailed aspects of the problem that must be explained.

During every depression, there are hungry and ill-clad workers unemployed, yet productive capacity is available. Simultaneously, in the west and south farm families are poverty-stricken, although the granaries and cotton warehouses are bursting with wheat and cotton, because crops can hardly be sold for a song. The farmers could use new trucks, tractors, and cars. The workers in Detroit need food and clothing. Elementary common sense urges that these participants in the economic scheme produce, and "swap," thus ending the difficulties of each group; but something prevents this apparently desirable solution of their problems.

Back in 1919 (again in 1946 and on more recent occasions such as 1973), it will be recalled that merchants could not get goods fast enough. The farmer wanted manufactured goods and the urban worker wanted food and clothing; yet for some reason neither class could seem to produce enough to satisfy the other. There was still a demand for more at rising prices. Something prevented the balanced exchange that might have been expected.

Here is a city which, in prosperous times, was growing by leaps and bounds. New apartments were being built, and actually rented. New office buildings were finding tenants with ease. During the subsequent depression, many of the same apartments and office buildings were empty. The former tenants were gone. Families had returned to the farm, or perhaps they had "doubled up" with relatives. The businesses were forced to curtail, some became bankrupt, and the empty buildings stood vacant with blank windows, bare desolation relieved only by a sign which read, "To let, will subdivide to suit tenant."

And, in 1929, high-priced cars could hardly be delivered in New York fast enough for a class of new rich. Here was one of the most fantastic features of the "new era." Individuals whose knowledge of economics and finance was either superficial or nonexistent piled up fortunes. For a time, at least, they reaped a rich harvest.

Thus one might go on, pointing out the almost innumerable paradoxes that occur during the business cycle. But this is enough to make clear the general nature of the problem.

THE SIGNIFICANT CHARACTERISTICS

There are obviously at least three conjectures concerning the data already mentioned. These are:

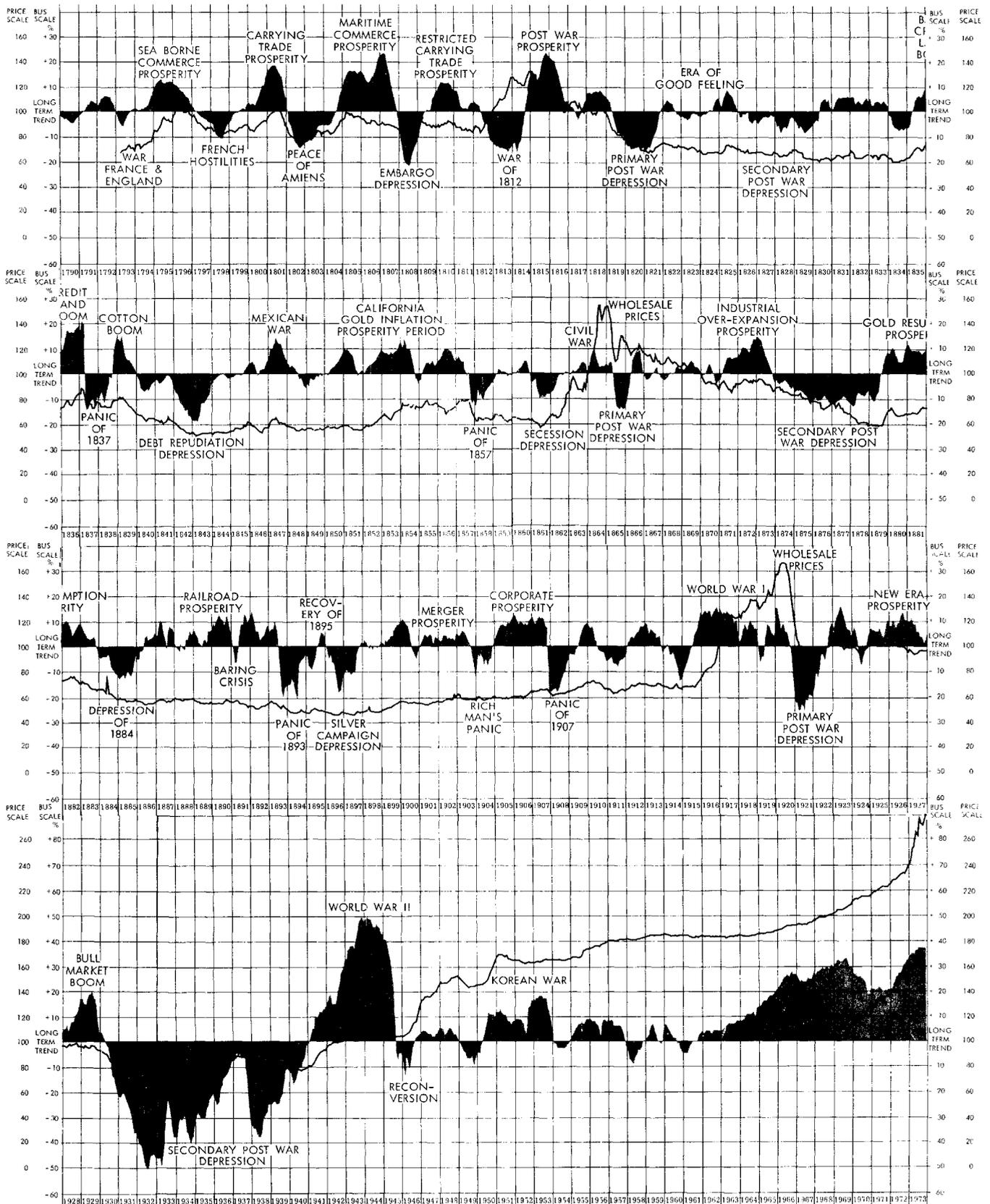
1. That business activity and prices would, in the absence of accidental disturbances, remain at or near the peaks of boom periods in the past; in other words, that an extremely prosperous condition is the situation to be expected if cyclical fluctuations were eliminated.

2. That business activity and prices would, in the absence of accidental stimulation, remain at or near the lows of the depression periods; in other words, that a condition of ruinous competition and reduced activity is the situation to be expected if cyclical fluctuations were eliminated.

3. That business activity and prices would, in the absence of stimulants or depressive influences, remain in

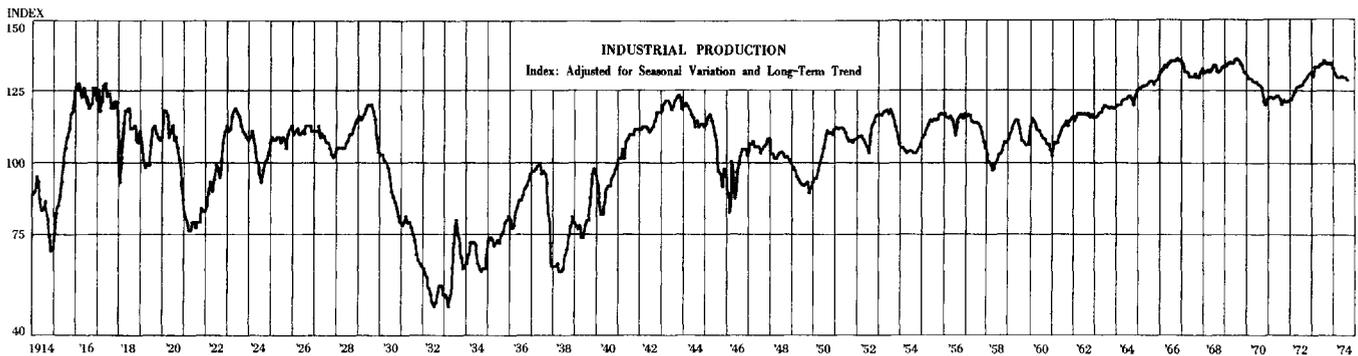
CHART I

AMERICAN BUSINESS ACTIVITY SINCE 1790



Source: The Cleveland Trust Company.

CHART II



an intermediate position, perhaps near the "normal" indicated on various charts and graphs; in other words, that business activity might accomplish its long-term progress gradually instead of by leaps and bounds forward and back, that commodity prices might continue the very slow downward trend in evidence during the hundred years of the nineteenth century, and that equity values might slowly reflect the growth of individual businesses.

The first of the possibilities described seems improbable for two reasons. In the first place, the peaks of the curves shown are not long and flat, with a tendency to return to any particular index number. The charts alone are enough to discredit this conjecture, but there is even stronger testimony available. However stable periods of boom prosperity may appear at the time, the underlying situation subsequently has been found to have been rotten to the core. The richest rewards were being accumulated by those who contributed least, and the spirit of getting something for nothing engendered thereby led a deluded multitude into follies of the get-rich-quick order that defied the accumulated experience of centuries. There is nothing stable about such a situation. Certainly, the evidence available does not indicate that absence of the business cycle would make possible permanent prosperity at peak levels.

The second supposition seems equally improbable, judging by the indications of the charts themselves. The valleys of the depressions do not mark out any well-defined level, from which the variations of the cyclical phenomena could be classed as mere accidental departures from a stable base. Furthermore, the situation during periods of extreme depression is as artificial as that during boom times, even if from a somewhat different point of view. For a man always to lose the rewards of his labor is as unnatural as for

him to get something for nothing; but, in a period of depression, many men do not reap any reward for their efforts. Even some of those who took no part in the follies of boom days lose the fruits of their labor.

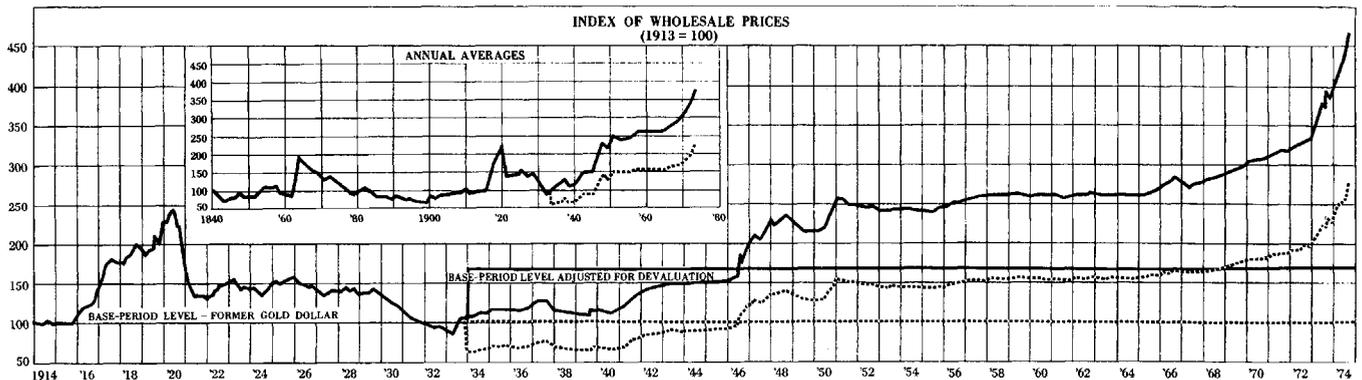
There remains, therefore, the conjecture that, in the absence of the business cycle, industrial activity would pursue a long-term upward trend without either the hectic periods of extreme prosperity or the paralyzing decay of extreme depression.

The last conjecture suggests that periods of boom prosperity are abnormal in precisely the same sense that extreme depression is abnormal. No doubt, this is generally accepted to be the situation. However, we should take as little as possible for granted, because mere general acceptance of a conjecture is not scientific proof. Looking back over the record, booms and depressions have followed one another since the beginning, but which came first is not apparent. It will pay, therefore, to consider briefly the characteristics of these periods in order to cast some light on the relationships that may be involved.

From this point on, one could spin fine theories that would leave the reader entangled in a web of half-truths and misleading assumptions. One could, in fact, make out a plausible case for either of several basic relationships. For example, that a boom is the result of deficient production during a depression may be argued. On the other hand, that depressions result from over-production during a boom also may be urged. These have all the earmarks of the familiar hen-egg-hen controversy and would probably result in equally unprofitable conclusions. Also, that booms and depressions are mutually responsible for each other's existence is another possible notion, and the opposite notion is that they are independent phenomena, neither being affected by the other.

Rather than embark on a series of extensive

CHART III



arguments in support of any of the foregoing contentions, or others, the data already presented will be considered with a view to seeing what relationships may be apparent. Following that, the investigation will be narrowed down to the salient characteristics common to all the business cycles shown.

Perhaps, in considering the first simple relationship, it will be best to deal with instances that some readers will easily remember. The late fall of 1920 and the fall of 1929 were both periods of decreasing business activity. Although it was not generally believed at the time, we now know that the underlying situation in each instance was unsound. For some time preceding the declines, individuals, businesses, and communities had been living beyond their means, and in order to do so had operated on thinner and thinner margins, or even none at all. To some extent, therefore, the declines represented a recovery to a sound basis, a liquidation of past excesses, the headache after the night before. This accounts, at least in part, for the swing of business below the peak level reached. To what degree this description is useful still remains to be seen.

When recovery occurs, for example in 1921 and 1922, the attempts to regain a decent standard of living on the part of millions of individuals might gradually be reflected in a return to normal conditions. But why recovery proceeds beyond that point until once again the boom phase of the cycle is reached requires investigation.

The principal tentative conclusion justified by these observations is that, although a depression may be in part attributed directly to the necessity of correcting previous maladjustments, the extreme prosperity aspect of the cycle does not seem to be so directly related to the preceding depression. But even this qualified and unsatisfactory conclusion cannot be considered final. It is hardly a solution of the problem.

We turn now to a consideration of those aspects of the cycle that are characteristic of it in all recorded

instances. For the purposes of this discussion, only the more obvious ones, about which there is no question, will be dealt with. Evidently, periods of prosperity include a large volume of production, high prices for goods (relatively to adjacent periods of depression), and high prices for securities, especially equities. In times of depression, the situation is reversed. These observations are simple, in fact are little more than descriptions of "prosperity" and "depression," respectively. Nevertheless, these facts are of great importance.

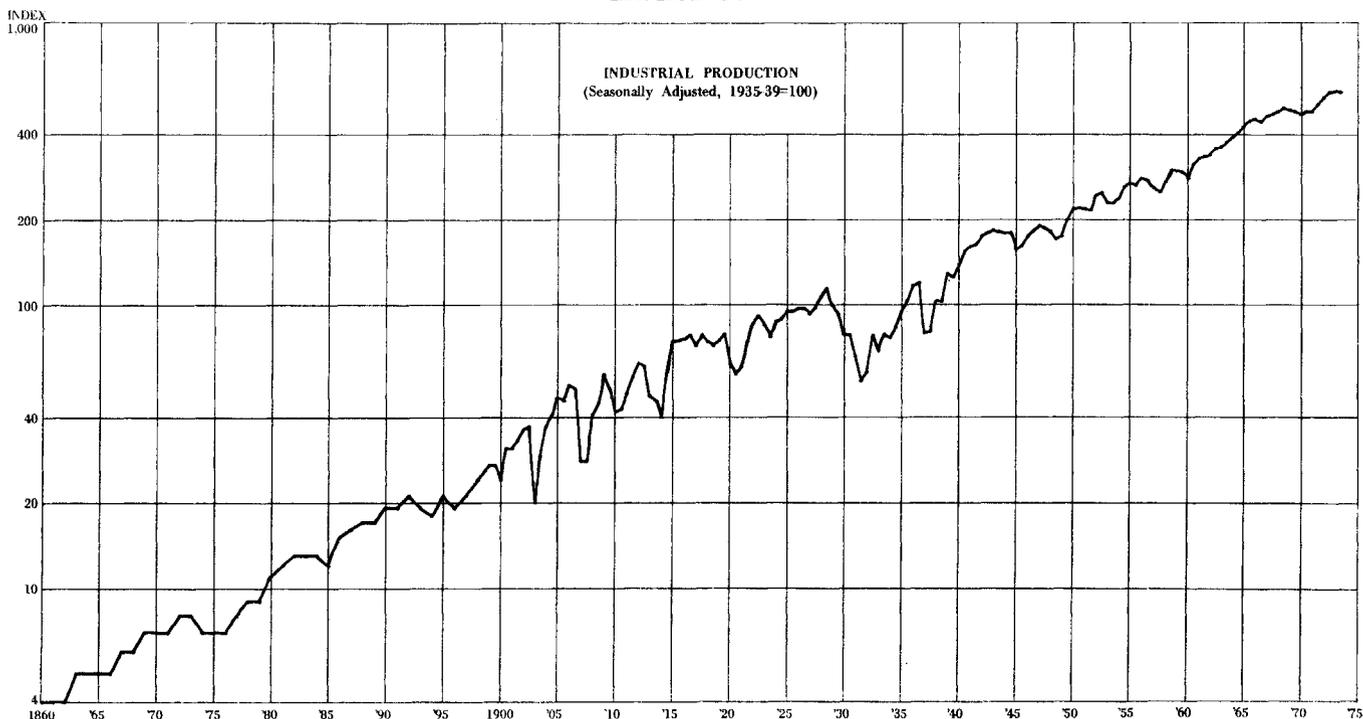
Long experience in all kinds of markets with all kinds of goods has proved that enlarged production that is not in response to a greater demand, or that does not meet an increasing demand, very quickly results in lowered prices. But, during booms, prices are rising while production is increasing. A reasonable conjecture is that during periods of extreme prosperity, demand exceeds supply. Now, this does not mean an excess of desire alone, a mere superabundance of wishfulness on the part of would-be consumers. Desire must be backed by acceptable purchasing media before it becomes demand in the market place.

During a depression, demand for goods greatly decreases. In spite of the fact that industrial production is reduced, even the lessened production cannot find a market; stocks of goods accumulate; and prices fall. This strongly suggests that demand has shrunk more than productive activity had decreased. When it is remembered that hoarding was an unusual phenomenon in this country prior to 1930, and that banks ordinarily seek to make use of funds at their disposal without delay, attributing depression to a mere tendency to save seems unsatisfactory. (On this point, more will be said later.)

THE PROBLEM SUMMARIZED

From the foregoing, we see that the obvious characteristics of the cycle justify certain conjectures.

CHART IV



These are: (1) that the boom aspect of the cycle is made possible by an excess of demand in relation to current production, and (2) that the depression phase of the cycle reflects a deficiency of demand in relation to current production.

At this point a note of warning is advisable against deserting the scientific method for the short cut to the wrong answer that so many have already followed. Many have assumed that, if a beneficent government would only monetize silver, or set the printing presses to work, or embark on some other scheme similar in principle, all would be well. Unfortunately, depressions will never be cured so easily. This type of solution, as proposed by the Greenback Party, by Bryan and by the pump-priming theorists, overlooks significant aspects

of the problem. In particular it neglects entirely the fact that the boom phase of the cycle was engendered by an excess of demand in relation to current production; it disregards the role of liquidating pressure in correcting the maladjustments that were created during the boom; and it sets up no adequate criterion by which the advisability of further emissions of paper money or its equivalent in the form of bank credit may be decided. (These questions are discussed at greater length in Sections VII and VIII.)

If, then, this short cut is to be abandoned, we return to a scientific consideration of the problem as it now appears. How is it possible for an excess of demand in relation to current production to be in existence at one time, and how can there be a deficiency at another time?

II.

PRODUCTION AND DISTRIBUTION

BEFORE proceeding with the investigation, some space must be devoted to a description of the present economic system. In so doing, the application of a few technical words will be explained. This bird's-eye view of the situation will disclose what may be called the normal or ideal functioning of the elaborate economic machinery that a complex civilization has evolved.

FORM, PLACE, AND TIME VALUES

Production of goods, from the beginning of recorded history, has been simple in its broad outlines. It consists of the creation of form, place, and time values. In other words, substances as found in nature are changed in composition or shape, transported to the point of use, and held there until wanted. Each of the separate applications of human effort in one way or another ordinarily increases the value in exchange of any particular article. For all practical purposes, the effort required to accomplish any of the three types of production may be considered as incorporated into the substance concerned. In terms of other articles requiring the application of human effort, the value of any specific article increases with each new adaptation in form, place, and time. A simple example will serve to illustrate the point.

Wheat, as it stands in the fields ready for the harvest, may be said to have been produced, because it then exists in a finished condition as far as nature and the cultivator are concerned. But, from the economic point of view, the process of production barely has begun. The farmer, in transporting it to the local elevator, adds place value that is later augmented by other means of transportation, usually the railroad. In the merchant's elevators there is a slow accumulation of time value as the winter months go by. The human effort involved in this situation is, for the most part, second-hand, so to speak. That is, it has previously been devoted to making the elevator and is drawn from that structure during its economic life. The elevator is what the economist calls "capital" or a "capital good" or "production good." This procedure of applying human effort to new production through the medium of a previously produced article of capital usually is present in more or less degree in all forms of production.

Continuing the simple illustration, the miller changes the form of the wheat, thereby further adding to its value for exchange purposes. The flour is transported to the markets, thus adding more place value. Finally, it is available on the shelf at your grocer's at the instant you choose to buy it. Thus a final increment of time value has been added. Obviously, the example could be made more detailed by introducing the part played by the wholesaler, the baker, the deliverman and so on. But our purpose is achieved if the outlines of the picture are complete. Any business man can fill in the details from his own experience in his particular field.

DISTRIBUTION BY EXCHANGE

The process of production does not complete the economic existence of any particular article. An essential feature of the present economic scheme is the additional process of exchange by means of which distribution is accomplished. Broadly speaking, this is nothing more than the trading of one article for another in order that each individual may obtain a variety of things he desires in exchange for the large quantity of one class of goods that he may have processed, or to which he has acquired title in one way or another. This distribution process is of sufficient importance to bear further investigation.

Back in the days of a simple barter economy, the exchange process was elementary and direct. Even when the use of gold and silver by weight was involved, what occurred was no more complex than the actions of John in exchanging his knife for Bill's marbles. That there is no record of business cycles in those earlier days may be significant.

The modern distribution-by-exchange process is somewhat more complicated. It includes an elaborate mechanism that has slowly evolved as men have seen the need for it and developed its possibilities. For want of a better name, it will be called the "money-credit system." Its visible institutions are, of course, the commercial banks and their appurtenances, such as clearing houses. Inasmuch as the business cycle has been known to exist only where there was a money-credit system, there is a strong presumption that booms and depressions are made possible by some malfunctioning on its part. But presumption is not proof, and it will not do to jump to conclusions. However, there is ample justification for close scrutiny of the money-credit mechanism. The first step is to describe its ideal functioning in the economic scheme.

One of the simpler methods of discovering the function of any particular institution is first to picture the difficulties that would arise in its absence, then to imagine a satisfactory solution of those difficulties, whereupon the actual functioning of the existing institution together with its possible imperfections may become apparent. This method often is useful because the present economic organization *does* function, albeit with some lamentable imperfections. It follows that each existing institution must have overcome at least the most serious difficulties that would arise in its absence.

Let it be supposed, then, that by some stroke of national amnesia the dollar and all the vast network of credit, including the entire banking system, is removed from the American economic scene. Presumably, the wheels of industry would not instantly stop. However, only a short time would elapse before almost innumerable difficulties would be encountered. Commerce and trade, at first anyway, would be reduced to direct barter. Workmen would necessarily receive their wages in the form of part of their product. The farmer's hired man

would appear in the nearby city with a dozen sacks of wheat to exchange for his monthly spree. The automobile mechanic in Detroit would bring home forty-three thousand nuts, one-half inch, hexagonal, standard thread; and would then have an entertaining week-end trying to persuade the butcher, the baker, and the gas meter to accept them in trade. Everyone would soon have an assorted pile of articles useful only to someone else. The automobile assembly plant would have to estimate how many rear wheels were the equivalent of a completed automobile in order that, when the local butcher had brought in enough of them, he might be issued a new truck. Without going further into detail, it is evident that commerce and trade would be greatly retarded, if not brought to a halt.

EXCHANGE BY CREDITS

Now, it is reasonable to suppose that, faced with the circumstances outlined, an intelligent society would quickly devise a method of accounting that would enable the desired exchanges to be made without actually passing goods from hand to hand. In other words, that an elaborate bookkeeping system might be established is conceivable. Jones, a worker in a Detroit factory, would then pay his grocery bill with a certificate showing that he held title to, say, three rear wheels, his share of the week's production.

But such a system, although immensely superior to crude barter, would still present many difficulties. The grocer would have to accumulate certificates representing all the parts necessary to build a truck before he could actually obtain one, or some basis for exchanging certificates would have to be developed. On the whole, it would still be far from a satisfactory arrangement.

Having reached this stage in an attempt to facilitate commerce and trade, the social group might soon evolve the idea that if there were only a common denominator for all kinds of goods and services, exchanges could be much more readily accomplished. Unfortunately, there is no real and easily measurable common denominator, in the mathematical sense, of milk, automobiles, houses, novels, and spare parts, not to mention the innumerable other products of this machine age. In the absence of such a common denominator, a somewhat different method could be used. Any one product could be designated, and all other products might be carried on the books in terms of that product at such ratios as were determined from time to time in the market place where all products were ordinarily exchanged. Any one of the many products that could be definitely fixed as to quantity and quality would serve the purpose more or less satisfactorily, depending on other factors that need not be mentioned at this point.

Let it be supposed that wheat is the product chosen by this progressive society, in terms of which it is planned to record all other products. The hundred-car production of an automobile factory during one week might then be equivalent to (that is, might freely exchange for) one hundred tons of wheat on the open market. If it be assumed that Jones' share of the production is about one thousandth of the total, then on the elaborate books maintained he would be credited with two hundred pounds of wheat, in spite of the fact that he had not produced any wheat at all. In a somewhat similar manner, the remaining wheat-equivalent of the hundred cars would be apportioned, on the books, to those entitled to a share, (that is, interest to capitalists, dividends to

stockholders, salaries to management, rent to ground-owners, taxes to the public treasury, etc.).

All the various agencies or factors of production would then have credit on the books of society in terms of wheat. This procedure would make it unnecessary for the butcher to collect Ford-parts certificates, or credits, until he had enough to make a car. He need only save enough wheat credits and the car would be his. If titles to all production were similarly distributed, commerce and trade would be greatly expedited, would approach the existing system in fact. It only remains to substitute gold for wheat and to call a certain unit weight of gold by some definite name, as for instance "dollar," and the difference between this imaginary system and that formerly in daily use becomes difficult to find. But there is a difference, and it is that difference which introduces many difficulties.

In the next section, an important maladjustment that may arise will be discussed. At this point, it will be sufficient to note that the elaborate distributive process in continual operation is made possible by the banking system. As goods are produced, or new increments of value are added, equivalent dollar credits may be created by the banks. These are in the form of new demand deposits, which are circulated by the familiar checking process, until, as the goods in any particular instance are sold, the producer is able to repay bank loans and thereby retire from circulation the specific amount of credit that corresponded to and made possible the distribution of the goods involved.

Note: During the many years since publication of the first edition of this study, American Institute for Economic Research has continued research on money-credit problems thereby extending greatly the scope of the original research. In the course of that research and in answer to many questions raised by economists and others, a more extensive description of the originating, circulating, and canceling of purchasing media has been developed. This is included in the following pages as an aid to readers who might otherwise find that the original material left unanswered questions.*

ORIGINATING, CIRCULATING, AND CANCELING PURCHASING MEDIA

This section of the report discusses aspects of economic behavior concerning which brilliant monetary economists have reached a wide variety of incompatible conclusions after studying the same economic developments. Like the several blind men who offered a variety of descriptions as each touched a different part of an elephant, many monetary economists seem to be blind to some of the economic facts of life. How else can one account for such a variety of findings by people who by no means are ignorant simpletons?

The range of views extends from those who would require 100-percent reserves for all "money" in use to those who recommend a continually expanding "money" supply without any necessary relation to internationally acceptable reserves or to the exchange values of things offered in the markets. Some urge the gold standard, and some decry gold as a "barbarous metal" that should have no place in the money-credit affairs of modern men.

So insistent on their own views have those in the

*In E. C. Harwood, *Useful Economics*, American Institute For Economic Research, Great Barrington, Massachusetts (June 1970).

various schools of thought become that communication among them is difficult. Unfortunately, few seem to feel any responsibility to the public that would incline them to study views different from their own and clarify the reasons for such wide divergence. We shall attempt here to describe aspects of the problem in such a manner as to account for the variety of answers to the basic question: How should a money-credit system function in order best to serve its purpose in an expanding economy?

Many economists use the word "money" as though it were a name for something agreed upon by all concerned. That is not the situation. Without once more describing many of the different applications of this term or name, we shall simply avoid using it. From this point on we shall use more accurately descriptive terms suitable for scientific discourse. Fortunately, we need not invent new words and thereby develop a technical terminology that might be more confusing than enlightening. Accurately descriptive words and phrases in common use among those who would read this report are available and will be used, such as purchasing media instead of "money."

The words "designate," "label," and "name," are used here in the ordinary way of referring to naming, i.e., the process of applying names to things (including objects, events, and relations among them). In order that their inquiries may develop useful warranted assertions, scientists have found that painstaking care in designating or naming whatever they wish to talk or write about, is essential. Those who will not trouble to exercise such care seemed doomed to wander in the semantic swamps where so many would-be scientists, including far too many economists, have been lost for decades. Also to be emphasized is that descriptions of things including events are simply expanded or elaborate namings. What are sometimes called explanations, we prefer to label descriptions of what happens under specified circumstances. We hope that these brief comments will help readers of this report to avoid the semantic swamps.

Lest our procedure be misunderstood, we emphasize that what follows is a description of what may have happened under certain circumstances, or in some instances of what has happened, or in some instances what may happen in the future. All assertions made are scientific hypotheses; that is, they are invitations to check against the facts of economic behavior. We do not offer axioms, or self-evident "truths," or assumptions and then proceed by purportedly logical development to prove anything or thereby arrive at scientifically warranted assertions. This disclaimer is necessary because we often find that readers accustomed to older methods of inquiry assume that we must be following their procedures. The extent to which the assertions offered in this report are useful will be determined by the extent to which such descriptions of what happens under specified circumstances are confirmed by the measured facts reflecting economic behavior in the past and the future.

An outline of the subsections that follow may assist readers:

1. First is a summary description of economic activity including the process of exchange in modern markets.
2. Second is a simple description of the operation of a satisfactory purchasing medium using the operations of a baggage checking service as a means of describing certain operations in familiar words.
3. Third is a description of the evolution of commercial banking and the purchasing media actually used.

4. Fourth is a description of what has happened in recent decades including presentation of certain research findings of facts that confirm some of the conjectures (hypotheses) offered and thereby qualify them to be labeled scientifically warranted "theories" or assertions about what happens under specified circumstances.

PROCESSING AND EXCHANGING

The description of man's economic behavior in preceding sections makes clear that the origination, circulation, and cancellation of purchasing media are operations incidental to the effective coordination of man's economic behavior. In effect, the purchasing media used may be regarded as claim checks that entitle the holders to obtain things in the markets. Evidently then, purchasing media must be originated to represent newly processed things; the circulation or exchange of such purchasing media must be arranged for; and, when the thing represented by particular purchasing media has been withdrawn from the exchange process by the final consumer's purchase, that purchasing media or a corresponding amount must be cancelled or withdrawn from circulation. Unless all three of these operations, origination, circulation, and cancellation, are done efficiently, inadequate amounts of purchasing media might be in existence at one time, too much at another time, and exchange processes would be impeded if the circulation of purchasing media were not properly handled.

In the paragraphs that follow we sketch in bold strokes a simplified picture of the economic activity in a modern industrial society. No attempt is made to analyze in detail the multitude of activities that result in the things and services people want. We present only a general view and focus attention on only a few of the more significant relationships.

Millions of people are taking raw materials found on or comparatively near the surface of the earth or from the lakes, rivers, oceans, and air and are passing these materials along to others. Some are taking fish from the sea, others trees from the forests, others grain from the fields, and others cattle from the open ranges. In a bewildering variety of ways these things found in their natural state or cultivated by man are extracted or harvested or otherwise taken from their place in nature and passed along to others for further processing.

Sometimes the raw materials are altered in form or substance as well as in place and time before they are passed along. In nearly all instances, however, the first man to handle these items rarely prepares them for human consumption. Unlike their primitive forebears, few men in a modern industrial society both take raw material from nature and prepare it for final use.

For the most part, the raw materials are passed along to millions of other men who labor in refineries, factories, mills, and finishing plants of almost limitless variety. Some of the original materials pass through several stages as the semi-finished output of one industry becomes the raw material for another until the final result is an item ready for use.

And after the things have been thus processed they are passed along to others, sometimes to jobbers or wholesalers, subsequently to retailers in most instances, but also in some instances directly to users. Finally, the things reach millions of others who eat some of the items, wear others, live in others, ride in others, and in a number of other ways consume the numerous items and ultimately discard them, thus returning them to or near

the surface of the earth or the sea from whence they came.

The multitude of transactions as materials in various stages of processing are passed along involve successive sales from the point of view of those giving up the items, or purchases from the point of view of those acquiring them. Each such transaction is both a sale and a purchase. What does such a transaction involve?

Clearly the end result of the processing is that the many participants effect an exchange of some items for other items they wish to consume. Moreover, millions of other individuals who do not participate in the manufacture, storage, and distribution of things obtain some of the items by offering their services in exchange. However, few of the transactions involve barter (the exchange of some things directly for other things or services); nearly all of the enormous number of exchanges in a nation like the United States involve not barter but the use of one or another of the three principal types of purchasing media; i.e., coins, currency, or checking accounts (demand deposits).

Many millions engaged in processing things receive weekly or monthly wages in the form of transferable purchasing media. These may be in the form of paper currency and coins or in the form of checks that the recipients have their banks add to their own checking accounts (demand deposits). Evidently these are claims on the things currently processed; that is, these purchasing media can be used to buy the items in the markets. In fact, it is by the use of such purchasing media that the innumerable exchanges are effected.

Now what are the principal characteristics that such an exchange or purchasing medium must have? The answer can readily be outlined merely by observing what functions it serves.

Evidently the purchasing medium must be or must represent some kind of common denominator. If the individuals producing automobiles received claims on automobiles and the individuals producing wheat received claims on wheat (so many bushels of a certain kind and specified quality), the subsequent exchange processes would have nearly all the disadvantages of barter. Such claims would not be the general purchasing media used in modern industrial society.

The only practicable common denominator thus far discovered is some particular thing that has been processed (produced). Presumably, any one of the innumerable items processed might be used as a common denominator in terms of which the exchange values of all other items could be stated. Such a common denominator having been agreed upon, tacitly or otherwise, claims on specific amounts and qualities of that common denominator also can be used as exchange or purchasing media.

Once such a common denominator of exchange values has been selected, it or claims on it are readily accepted by each individual, because he knows from experience that every other offerer of things or services in the market place will sell his things or services for the common denominator or claims to specific amounts of it. This widespread acceptance as the common denominator of exchange values thus is essential if such a purchasing medium is to be satisfactory.

But widespread acceptance alone is not enough to make a satisfactory purchasing medium. Exchange transactions are greatly facilitated when the acceptable common denominator also is standardized as to amount and quality. For example, silver has at some times and places been used as a purchasing medium. Silver is

produced in an infinite variety of degrees of purity, but refining silver to measurable standards of purity is practicable. Silver, like many other things, can readily be made available in different quantities also of virtually infinite variety from pieces too small to be seen with the naked eye to blocks weighing several tons.

Men long ago found that a unit amount of the common-denominator item, standardized as to quantity and quality, greatly facilitated the counting and exchanging process. Then for the more elaborate description, "one ounce of silver nine-tenths fine (or pure)" men could substitute in all their accounts the simple symbol "\$1.00" or the word "dollar" and, if a merchant received some silver in exchange for a table, instead of recording in his books that he had received "two pounds and three ounces of silver," he could use the shorthand symbol of "\$35.00." In England where silver was for long thus used, they did not even trouble to devise a new word for the exchange unit, but called it a "pound," meaning one pound by weight of refined silver.

In surveying the American scene we have found that silver was once the common denominator commodity but that the people of the United States changed long ago to gold. Although "dollar" once meant a specific amount of refined silver, the definition was changed in 1849 so that "dollar" from then on was also the short name for a specified amount of gold, nine-tenths fine; and in 1873 the gold dollar was substituted for the silver dollar as the standard unit in the United States. Thus we find that, in addition to being widely acceptable as a common denominator of exchange values, the exchange or purchasing medium should be standardized as to quantity and quality in the interests of efficient record keeping as well as to facilitate the bargaining processes incidental to numerous exchange transactions. Obviously, the work of detailed specification is greatly reduced when only the item bought or sold need be specified in detail and the purchasing medium can be taken for granted.

Many of the millions who receive purchasing media in one form or another do not immediately exchange them for items to be consumed. By depositing some of their purchasing media in savings banks, buying bonds or other securities, paying life-insurance premiums, etc., they thus save and invest. In these ways they carry out plans to have funds available, either as income from the investments or by selling the investments, for the purchase of things for consumption at a later date.

In the meantime, of course, the purchasing media thus transferred to savings banks, life-insurance companies, and others are used to buy things in the markets, ordinarily the new items of plant and equipment needed by industry and others.

But we are concerned with another aspect of the problem here. Presumably, those who save and invest as well as those who enter into numerous contracts of various kinds that extend over more or less prolonged periods want the purchasing media that are returned later to have the same, or nearly the same, exchange value as the purchasing media they save and invest or lend. That is, the value of the common denominator of exchange values used should be relatively stable over long periods.

Economists have described these desirable characteristics of purchasing media as follows:

1. Usable as a medium of exchange.
2. Constituting a standard unit of exchange value.
3. Serviceable as a store of value.

Of course, for any commodity to serve as a store of value, it must be virtually imperishable; that is, it must

not rust, rot, or decay. In order that millions of standardized units may be readily available, it must be easily refined and coined or otherwise manufactured in standard units or multiples thereof. In order that it may serve as a medium of exchange, it must be convenient and widely acceptable for that purpose.

In the course of our inquiry it was not apparent at first that the characteristics mentioned above are all so important. In the United States *claims* for the standard unit have superseded it in circulation. Checks and paper currency are used in nearly all the exchange transactions today. These transferable claims to various amounts of the thing used as the basic purchasing medium can be handled more efficiently than the coins or bar metal can be transferred from one holder to another.

As anyone can readily see, once claims, that is, pieces of paper or paper records, are substituted for the thing used as the basic purchasing media in most exchanges, the risk of counterfeiting increases greatly. Moreover, a new risk arises, the risk that paper currency and other claims will be legally issued or created far in excess of any reasonable relationship to the exchange value of things currently in or enroute to markets. We shall discuss this aspect of the problem in greater detail later.

For the time being, we wish only to emphasize that the records of nearly all exchange transactions are reflected in the accounts of those who specialize in handling the transferable claims to the thing used as the basic purchasing medium. These are the banks, whose extensions of credit (creation of claims) and crediting and debiting of checking accounts constitute a major part of the process.

Even if the purchasing media in use, the currency and checking accounts, had no effect on buying and selling activities, the record would be important as a clue to the course of economic activities in general. But the record is seen to be of even greater importance when one realizes that the amount of purchasing media frequently is increased without reference to the actual exchanges to be performed and sometimes is decreased with a similar disregard of the job to be done. Under such circumstances, the money credit system becomes not the innocuous means of facilitating exchanges but an "engine of inflation" or of deflation as the case may be.

A SATISFACTORY PURCHASING MEDIUM

Everyone who lives in a modern industrial country readily can see that innumerable exchanges of some things for other things are essential. Nearly everyone who either is engaged in processing things (growing, or harvesting, or manufacturing, or transporting, or selling, etc.) or is providing services (haircuts, theater performances, medical care, legal advice, etc.) is not *directly* satisfying his own desires but those of others. By means of innumerable exchanges individuals obtain what they want for themselves, i.e., for their own consumption or use.

From childhood everyone participates in some of the vast number of exchanges; practically everyone is a buyer on numerous occasions, and many are more or less professional or skilled sellers. Therefore, the fact that nearly all exchanges are effected by using purchasing media (coins, or paper currency, or checks) is familiar to all.

A casual observer might well conclude, therefore, that nearly everyone surely understands all that one needs to know about the purchasing media (sometimes called "money") so frequently used. Such is not the situation,

however. Not only is "money" a mystery to many people who use it regularly, but also "money" and its uses rarely are described adequately by the supposed experts. Part of the difficulty encountered by the experts is attributable to the apparent inability of many to use the word "money" in a scientific manner. We shall not digress here to give examples of such inadequate usages because we wish to proceed to other matters. At this point we simply re-emphasize that we shall not attempt to rehabilitate the word "money" for our purposes but instead shall describe the uses of coins, paper currency, and checking accounts. For any of those or for all three from time to time we may apply the name "purchasing media."

Lest some readers conclude that what has confused the experts must be beyond the ability of most people to understand, encouragement is in order. We have taught many graduate Fellows in the last two decades, some of whom already had their Doctorate degrees. From their undergraduate and postgraduate textbooks and instructors, none had obtained adequate comprehension of the basic principles of commercial banking, which is concerned largely with the origination, circulation, and cancellation of purchasing media. Nevertheless, all were able to understand the descriptions that we have developed. Moreover, based on communications from many readers of Institute publications, we are convinced that one need not be a postgraduate student of economics in order to comprehend. Our belief is that anyone capable of understanding a baggage checking service has sufficient intellectual ability to understand descriptions of the basic principles of commercial banking.

The operator of a baggage checking service must:

- a. Receive a continuing inflow or supply of baggage and issue a claim check for each item.
- b. Hold all baggage where it will be readily available or offered on demand to holders of claim checks.
- c. Deliver baggage to the holders of claim checks when they present the checks and demand their baggage in exchange.

Certain basic principles that the operator of a baggage checking service must apply if his job is to be properly done are obvious:

1. Claim checks should be originated and issued only for baggage actually received. Issuing claim checks in excess of the baggage received clearly could result in serious problems when the demand for baggage by holders of claim checks later exceeded the baggage on hand.
2. Claim checks should be issued to represent *all* baggage received; otherwise a surplus of baggage that could not readily be claimed by anyone would accumulate in the storeroom.
3. Whenever any holder of a claim check demands his baggage, the claim check taken in exchange should be destroyed, or at least should not be reissued except to represent more baggage brought to the storeroom.

If the reader who has followed the discussion thus far has understood it, he already has grasped certain basic principles of commercial banking; in that respect he is better informed about money-credit matters than are many, we suspect by far the most, of the world's commercial bankers. What follows is a description of the organization and issue, circulation, and cancellation of purchasing media, which are claim checks used to demand the things offered in the markets of modern nations.

The markets and the commercial banking system constitute the "baggage checking service" of a modern economy. Processors of an almost infinite variety of

things bring them to various markets offering raw materials, manufactured items, wholesale lots, and retail quantities. In cooperation with the processors, the commercial banking system issues purchasing media representing the things offered in the markets. Such purchasing media are circulated:

First, by managers of processing operations who pay wages, dividends, etc. to those entitled to shares of the things processed.

Second, to some extent by being exchanged for personal services, or to repay debts, or for other transfers not constituting immediate demands for things in the markets.

Third (and in some instances second), to demand processed things available in the market.

At this point, readers should note a difference between the usual claim checks for baggage and the purchasing media just described. Properly issued claim checks for baggage usually have numbers or other means of identifying the baggage for which they were issued. The person who brings his suitcase to the baggage checking counter wants the same suitcase when he chooses to present the claim check and demand his baggage.

The purchasing media serving as claim checks against things in the markets also have various numbers, but the numbers indicate the estimated exchange values of the things represented. During the evolution of commercial banking, the claims checks or purchasing media issued at one time had both numbers and names such as "this claim check represents 100 bushels of wheat offered for sale in my warehouse." Note that even then, a step away from ordinary baggage checks had occurred, because the particular lot of 100 bushels (of which many presumably were available at the markets) was not specified on the claim check or purchasing media. This procedure is only one step removed from barter (the exchange of physical things in the markets).

Many years ago a further step was taken when only the quantity of one item widely used as the medium of exchange was specified. Today in the United States all purchasing media, or claim checks used as purchasing media, state only the exchange value in dollars (still defined as a fraction of an ounce of gold) of whatever things they were issued to represent. By examining the purchasing media, whether coins, paper currency, or checks, one cannot tell what things or even what kind of things were represented when the purchasing media were issued; one knows only that the purchasing media purport to represent exchange values specified in dollars. (We urge readers to remember that "dollar," by U.S. statute, is the legal name for part of an ounce of gold.)

At first thought, the change to having purchasing media (or claim checks) marked in dollar amounts to represent exchange values may seem a fundamentally significant divergence from the manner of operating a baggage checking service. However, claim checks for baggage are marked so that the holder may later have the use of his own luggage; purchasing media claim checks are marked so that the holder may later have the use of the value he has added to things in the markets by his processing efforts. The latter individual does *not* want whatever he placed in the markets, he wants to use a corresponding value of other things available in the markets. When this is understood, one readily sees that the difference noted does not alter the basic principles previously described.

How well do the three basic principles of operating a baggage checking service apply to the operation of

modern markets and the commercial banking service? This question can be answered by restating the three principles with minor variations and appropriate comments.

1. Purchasing media should be originated and issued only for the gold-exchange value of things actually processed and received in or available to the markets.

a. Originating and issuing purchasing media in excess of the gold-exchange values of things available in the markets clearly could result (and has resulted) in serious problems when the demand for things by holders of purchasing media later exceeds the usual exchange values of the things offered for sale. More specifically, under such circumstances, prices generally would be bid up to higher levels as prospective buyers sought to use the excess purchasing media.

b. As prices rose above expected levels, the first consequences would be windfall profits for sellers and a relative shortage of supplies in the markets. All processors would be encouraged to increase output, even to expand greatly plant and equipment. If such expansion were financed in part by issue of still more excess purchasing media, the economy would experience an upward spiral of prices and wages. If continued indefinitely the end result could be great depreciation (loss of buying power) of the purchasing media, even to the point of it becoming worthless, as has happened on many occasions.

c. If the upward spiral is halted and excess purchasing media are withdrawn from circulation, the speculative boom will collapse, things offered at high prices will remain unsold, and processors will be forced to reduce output until prices and wages fall to a lower but sustainable level. This has happened many times in many nations during the past few centuries.

2. Purchasing media should be originated and issued to represent the usual gold-exchange values of *all* things processed and received in the markets for sale.

a. If this is not done, prospective buyers will not have sufficient funds to buy all things offered at the usual prices. Prices generally will decrease.

b. As profit margins of processors are reduced by the fall in prices, some processors will become bankrupt and cease operations. Even those able to continue operations will be forced to reduce output by using only the more modern and highly efficient plant and facilities.

c. As prices and wages fall, gold production will be encouraged, because output still sells at the rate of specified dollar claims for each ounce of gold, but costs of mining decrease as prices of machinery and wages decline. Lower-grade ore then can be mined, and in time output will increase. Inasmuch as delivery of gold to the commercial banking system ordinarily results in the creation of additional purchasing media, more purchasing media gradually will become available to prospective buyers. This will tend to correct partially but probably not wholly the economic disturbance described, but contraction of processing activity and widespread unemployment might have occurred.

3. Whenever the holder of purchasing media uses some to demand things in the markets, these purchasing media should be withdrawn from circulation and should not be reissued except to represent more things processed and made available for sale in the markets.

a. If the withdrawal is not effected, purchasing media in excess of the usual values of things offered will remain in the hands of prospective buyers. In this event, the upward spiral of prices and wages previously described will follow, as later will the recession aftermath.

b. Inasmuch as some processors are shipping

things to markets each week, or sometimes even daily, purchasing media originated and issued to represent what they are offering in the markets could remain in existence while the steady flow of things to markets continues. (This procedure involves what is called a "line of credit" provided by commercial banks to such processors and is described later when the methods of creating, circulating, and withdrawing purchasing media are discussed in detail.)

We have pointed out that increasing prices, wages, and business activity may follow when excessive quantities of purchasing media are issued, and that recession aftermaths are to be expected when the process is reversed. Everyone knows that periods of "boom" prosperity have occurred in the past and that recessions, sometimes severe depressions, have followed in each instance. This does not prove that excessive issues of purchasing media and subsequent correction of such errors were responsible, but the known facts are an invitation to investigate further. The first question is: How can the commercial banking system create and issue excess purchasing media and how can the process be reversed? This question can be answered by describing the evolution of commercial banking.

THE EVOLUTION OF COMMERCIAL BANKING

We begin this subsection by focussing attention on the buying and selling found in all modern economies. We note that buying and selling are aspects of transactions that include something transferred from the seller to the buyer and something else transferred from the buyer to the seller. Always there is the something sold (a physical thing or a service, such as an opera performance); and always there is something given in exchange, what might be labeled the medium used for purchasing, or purchasing medium.

We now focus attention on the things bought and sold in the Nation's markets. Clearly, many services, such as those of barbers and beauty salons, opera performances, clothes cleaners, and others are rendered directly to the consumers in exchange for purchasing media. Such services are not embodied in (or reflected in) changes in the form, substance, location, or time of availability of other things to be offered in the markets. The services themselves are offered directly and sold as such.

Somewhat different are the innumerable physical things offered in the Nation's markets. These may range from newly mined ore, or agricultural products, or forestry products, or many others that have been initially processed for marketing, to completed suits, shoes, watches, automobiles, and innumerable other items being offered in retail markets. By far the most of these things are processed for buyers (consumers) who have not been identified when the things are being processed (which includes placing them on shelves in the retailer's store). On the other hand, when many services are rendered, such as those already described, the buyers have been identified and in many instances already have paid for the service to be rendered. Those who have not paid beforehand (as for an opera performance) almost invariably pay immediately after the service is rendered (as to a barber, for example).

Some writers on economic problems have chosen not to differentiate as we have here between the principal classes of things (including services) available in the markets. Such writers note that human effort is involved for both types and have chosen to group them in one classification for this reason. However, the differentiation

(observing and naming a difference) that we have done in this report serves a useful purpose that is described later.

We now focus attention on the innumerable things other than services offered in the Nation's markets. Readers are reminded that these things may pass through successive markets for:

- Raw materials
- Semi-processed materials
- Factory output
- Wholesale lots
- Retail quantities

In every business day innumerable transactions occur in all the various markets. Somehow, purchasing media must be available for use in all markets if the many transactions in a modern economy are to occur. Barter is out of the question. (How could the General Motors employee who had provided a small part of the human effort involved in processing an automobile for market carry his share of an automobile around the markets as he bargained for his food, shelter, and clothing?)

Some readers might imagine that one step removed from barter might work. For example, a farmer, after depositing his wheat in a grain elevator and obtaining a warehouse receipt or claim check for 1,000 bushels of wheat, might go to organized markets and trade his warehouse receipts or claim checks for the somewhat similar claim checks on clothing and farm machinery. Thus he could obtain the things he wanted. However, even this procedure, although far more practicable than direct barter, clearly would not adequately serve the needs of a modern industrialized economy.

Obviously, if some kind of purchasing medium could be devised that represented the value in exchange of each thing or type of thing in the markets, exchanges could more readily be effected. By using suitable portions or amounts of such purchasing media, prospective buyers could buy what was offered in the markets.

At this point we should note that every seller is a buyer, not of course a buyer of what he is selling but of something else or of many other things. All who have shares in anything offered for sale, because some of them helped to process it, or because some of them provided the plant and equipment (bondholders and stockholders), or because some of them in some way obtained a legal right to a share; all of these persons and businesses wish to exchange their shares of some things for other things. The problem at this point may be described in a question: How can purchasing media be created and issued to those entitled to share in things offered in the markets in such a manner that not only will the total amount be correct at all times, but also will be of such nature that each portion of purchasing media used to buy anything shortly will pass out of existence and not be available to buy other things after the things originally represented have passed through the markets and are no longer available for purchase?

Describing the desired result somewhat differently may be helpful. Purchasing media are needed that:

1. Can be created to represent things offered in all the markets; and,
2. can be distributed among those entitled to share in those particular things; and,
3. can be removed from circulation as things are bought and thus removed from the markets so that any particular amount of purchasing media representing an automobile already sold, for example, does not remain in circulation thereafter where it could be used again in the markets to compete in buying other things that also are

represented by other purchasing media created to represent them.

If anyone unfamiliar with modern commercial banking were requested to develop purchasing media such as those described he might well have difficulties. For example, how would the exchange value of anything be stated, in what units?

Fortunately, the development of man's trading activities provided the answer to this question long before anyone thought of asking it. In all human societies that have developed to date, one or a few things have come to be used as media of exchange. Over the centuries, various precious metals and finally gold became used as the most satisfactory medium of exchange.

Using gold or any other precious metals as purchasing media presented no particular difficulties as long as these exchanges merely were a somewhat more sophisticated form of simple barter. However, as the division of labor among specialists became greater, the number of exchanges required increased greatly.

Warehouse receipts or claim checks for gold were developed long ago in order to avoid the inconvenience of transporting large quantities of the precious metal. Then someone made an interesting discovery. No one knows who the enterprising goldsmith was or when the discovery was made.

In the following paragraphs, the evolution of commercial banking is described step by step. No attempt is made to date each successive step in the evolutionary process. Many of the original dates for successive steps are lost in the haze of man's unwritten history; and some of the successive steps have recurred in recent decades and may be expected to recur again wherever formerly well-developed money-credit processes have been destroyed.

PRIMITIVE MARKETS

We begin with a primitive society where exchanges were simple barter. The grower of wheat exchanged it directly for skins obtained by the tribal hunters, for meat obtained both by the hunters and by those who had cattle, and for gold obtained in crude form by some members of the tribe from alluvial deposits. Why gold was generally desired, other than for the fact that it was used for ornaments and because it could be exchanged again for other things desired, need not concern us at this point.

As the tribe increased in number and the exchanges to be made increased greatly, a time came when the bartering was concentrated, for the most part, at a convenient meeting place. Today we should call that meeting place a market or shopping center.

Of course, many things other than those mentioned were exchanged in the markets, but the principles we are seeking to understand can be illustrated by discussing only a few. We choose to focus attention on wheat, beaver skins, and gold.

As trading increased, the time came when some individuals became specialists in marketing. One chose to deal in wheat, another in beaver skins, and another in gold. Once these specialists had established themselves, many of those bringing in things to barter discovered a process more convenient than carrying on their backs the things they wished to offer in exchange. The processor of wheat delivered wheat to the warehouse and took in exchange a claim check or warehouse receipt for his wheat. Similarly, the processors of skins and gold took warehouse receipts from the merchants specializing in

skins and gold, respectively.

CLAIM CHECKS

Those who thus had obtained claim checks on wheat, skins, and gold then exchanged the claim checks among themselves until they had claims on the things they wanted. When each had claim checks for whatever he wanted, he went to the appropriate merchant's warehouse and obtained wheat, or skins, or gold in exchange for the respective claim checks.

The earlier claim checks for wheat presumably read:

This certifies that John Doe has placed in my warehouse 35 bushels of wheat, which I promise to deliver to the bearer of this claim check on demand.
Arthur Smith Wheat Merchant

Similar warehouse receipts or claim checks were written by the merchants handling skins and gold. In some instances the claim checks were not redeemable by the bearer unless the claim check had been endorsed or signed over to him by the original depositor of the wheat, but these details need not concern us.

GOLD AS THE MEDIUM OF EXCHANGE

As the market increased in size and activity men found, to an increasing extent, that gold or claim checks on gold were a convenient medium of exchange. On more and more occasions those who had gold or claim checks on gold found that they could obtain what they wanted with the least difficulty in persuading others to accept what they had to offer. Each seller saw for himself how readily he could buy other things he might want with the gold and how conveniently he could hold gold until he might wish to buy other things.

As a result of the increasing use of gold and claims on gold in effecting exchanges, men developed the habit of estimating the exchange value of other things in amounts of gold. Thus, prices, instead of being thought of and talked about in such ways as, "two bushels of wheat equal in exchange value one beaver skin," came to be thought of and talked about in such ways as, "one bushel of wheat equals one thirty-fifth of an ounce of gold, and one beaver skin equals two thirty-fifths of an ounce of gold" (also the exchange value of two bushels of wheat).

THE GOLDSMITHS

At about this stage in the development of banking, the gold merchants, or goldsmiths as they were called, saw the possibility of greatly simplifying the marketing and exchange processes. A goldsmith suggested to a wheat merchant that more growers of wheat would bring their wheat to his warehouse if he would give them in exchange claim checks on gold instead of claim checks on wheat. When the merchant replied that he had neither gold nor claim checks on gold to offer, the goldsmith explained that claim checks on gold could be borrowed until such time as the merchant might sell the wheat.

The wheat merchant decided to experiment as suggested. When the next wheat grower arrived with a load of wheat, the merchant offered him a choice between claim checks on wheat and claim checks on gold. When the wheat grower said he preferred claim checks on gold, the merchant stepped next door and gave the goldsmith the claim checks on wheat accompanied by his note promising to redeem the claim checks on wheat with gold or claim checks on gold. Whereupon the goldsmith

gave the merchant claim checks on gold, which were delivered to the wheat grower in exchange for the wheat he had delivered. The wheat merchant's promissory note read like this:

This is to certify that I have received and now offer for sale in my warehouse 100 bushels of wheat for which this note is a claim check. Received this date from the goldsmith 100 claim checks for 1/35 ounce of gold each. As the wheat is sold I promise to return to the goldsmith corresponding claim checks on gold with interest at 6 percent, and if I fail to return all the claim checks within 30 days the goldsmith may claim the wheat not yet sold.

Arthur Smith, Wheat Merchant

And each of the 100 claim checks on gold issued by the goldsmith read like this:

I promise to pay to the bearer on demand one thirty-fifth of an ounce of gold.

William James, Goldsmith

Shortly thereafter, the goldsmith made an interesting discovery. At first he had issued claim checks on gold totaling no more than the gold in his possession. His discovery was that few people who obtained his claim checks ever demanded gold. Most of them used the claim checks on gold as purchasing media to buy other things, and the sellers returned the claim checks thus obtained to the goldsmith as agreed in order to repay their borrowings. Occasionally, some individual demanded gold, but even that gold usually returned to the goldsmith, for safekeeping if for no other reason, within a short time.

COMMERCIAL BANKING

The much greater convenience to all concerned provided by the claim checks, especially those on gold, facilitated great increases in trade. Soon the goldsmith was being urged to issue claim checks on gold for greater amounts than the gold he had. By that time, he knew from experience that few who had claim checks would want gold if other things were available for purchase in the markets. Consequently, the goldsmith reasoned thus:

1. When I received gold from those who deposited it with me, I gave them claim checks. If I now issue more claim checks on the same gold, I must:

a. First, make sure that these additional claim checks do not exceed but in effect represent the gold exchange value (price measured in gold) of other things being offered in the markets; otherwise, the people who have my claim checks on gold may buy all of the other things for sale in the markets and still have enough claim checks left to demand more gold than I have.

b. Second, in order that there be no mistake, arrange that my loans of additional claim checks on gold are secured by bills of lading that prove things are offered in the markets or by promissory notes of borrowers who *assure* me that they are offering in the markets additional things at least equal in gold-exchange value to the claim checks I lend them.

c. Third, I must make sure that the merchants repay their loans promptly by returning to me the claim checks on gold that they receive when they sell wheat, skins, etc. Thus I shall be sure that there are not more claim checks outstanding than the total gold-exchange value of things left in the market place including my gold.

Obviously, I must lend my claim checks only for short periods and must insist that a merchant promptly repay me whenever he sells the wheat or other thing that, either actually or in effect, serves as security for his promissory note (and is represented by the claim checks he borrowed from me.) Only if some manufacturer or merchant were placing in the market additional items after the first were sold would I renew a loan instead of requiring it to be repaid.

2. The goldsmith might also have reasoned: Some people may think that I have issued too much purchasing media, more claim checks on gold than I can redeem. But if the claim checks on gold used to demand gold from me exceed the gold I actually have, there would be a relative shortage of claim checks available for buying other things in the markets; prices (the gold-exchange values) of many things would fall, and people who had withdrawn gold temporarily would be induced to spend it for the things available at bargain prices in the markets. The sellers then would repay their borrowings from me by depositing gold as well as claim checks on gold, and my gold holdings (reserves) would be restored. In a short time, there would be no claim checks on gold outstanding, or at least no more than I could readily redeem with gold if necessary.

3. Clearly, I must be careful not to overestimate the gold-exchange values (prices) of the things being offered on the markets, and I must be sure to issue claims on gold only to represent the total gold-exchange value of things offered on the markets plus my gold. Because my gold always is available to anyone who demands it by presenting claim checks, my gold also is on the markets. But I must be careful to make sure that the total of outstanding claim checks that I have issued never exceeds the gold-exchange value of all things offered in the markets *including my gold*.

Once the goldsmith initiated operations as just described, sound commercial banking was underway. Soon, more of the goldsmiths in the first market and then in other markets undertook the new business of commercial banking. However, for a long time they continued to be known as goldsmiths.

Today, those who perform these functions are known as commercial bankers; but by far the most of them do not understand or at least do not act as though they understood the basic principle of sound commercial banking. They ignore the principle that the new claim checks issued, that is, additional currency and checking accounts, should represent things (including gold) being offered in the Nation's markets.

Supplementary note: Today, when a commercial banker receives gold, he usually credits the depositor's checking account instead of issuing new claim checks in the form of paper currency to the depositor. (In the United States, now that gold coins no longer circulate, the commercial banking system receives gold certificates from the U.S. Treasury and credits its account; but this does not alter the principle here discussed.) Both checking accounts and currency are used as claim checks, or purchasing media, in the markets.

As will be clear if the description above is read carefully, some of the claim checks (today, in the form of currency or checking accounts) represent gold and some represent the gold-exchange value of other things being offered in the Nation's markets. Thus the total of claim checks (purchasing media) in circulation may be several times the total of gold held by the commercial banks.

Some economists, noting the technical form of the claim checks, *which all purport to be claims on gold*,

believe that the claim checks in excess of those that do represent gold directly are excessive and constitute inflationary purchasing media with, when used, a resulting disturbance of prices and business equilibrium. (Such economists relate this situation, quite properly, to the so-called "fractional reserve" arrangement for commercial banks generally.) Thus they have concluded that 100-percent reserves should be required.

Two important aspects of commercial banking are overlooked by such economists.

1. When all claim checks issued (all currency and checking accounts in use) do represent things (including gold) being offered for exchange in the market place, the purchasing media being used to demand things for sale do not exceed but equal the gold-exchange value of those things. Thus no tendency to distort prices or business activity arises; and,

2. As is described in detail later in this section, claim checks or purchasing media that do *not* represent either gold or other things being offered in the markets are issued by the commercial banks on occasion. Such excess purchasing media are inflationary in that they make possible the use of an amount of purchasing media to demand things in the markets greater than the approximate gold-exchange value of those things. Prices rise, and business activity is distorted. Booms occur followed by recessions when the commercial banks reverse the process.

Evidently, commercial bankers should understand what may be called the basic principle of sound commercial banking *and* should be shrewd judges of the gold-exchange value of things being offered in the markets and reflected in the commercial loans made by the bankers. When making such loans, the commercial bankers create additions to the checking accounts of the merchants and manufacturers or others involved in processing things; and such additional purchasing media, although purporting to be claims on gold, actually represent the things offered in the markets.

Even as able a student of money, credit, and banking as Dr. Murray N. Rothbard seems to be afflicted with a "blind spot" in this connection. In his booklet *What Has Government Done To Our Money?*^{*}, he refers to commercial bankers as issuing "...uncovered or 'pseudo' warehouse receipts. . .which represent nothing." He has failed to note that there are three classes of claim checks (or warehouse receipts or purchasing media) issued by the commercial banks:

1. Those claim checks representing gold being offered in the markets via its representative claim checks; and,

2. Those claim checks representing other things being offered for exchange in the markets; and,

3. Those claim checks representing various things that are *not* being offered in the markets.

Clearly classes one and two are the same in principle in that they represent things (including gold) being offered for exchange in the markets. On the other hand, class 3 claim checks are fundamentally different in that they do *not* represent anything available in the markets for exchange (or for sale). These are the excessive or inflationary purchasing media.

When the Federal Reserve System was under debate in Congress, recognition of the basic principle of sound commercial banking was evidenced, and that principle was

embodied in the Federal Reserve Act. Subsequently, it was first disregarded and then largely forgotten. Today, few bankers and even fewer economists seem to have any understanding of it. Obviously, fractional reserve requirements are a purely arbitrary rule-of-thumb means of protecting a commercial banking system against the ignorance of its managers.

Once sound commercial banking was discovered, or at least after it was generally understood, what happened? What has occurred that prevents the more advanced nations of the world from enjoying optimum economic growth free of the distortions that now threaten worldwide money-credit disorders? The short answer is that the basic principle of sound commercial banking has been so long disregarded that few bankers today ever heard of it and few economists understand it. But a more extensive description is desirable in order to make clear what has occurred.

Although the description of sound commercial banking given above may seem satisfactory to many readers, a question has been raised by some writers. They ask: Inasmuch as those offering services also need buyers who are ready with purchasing media, why shouldn't the commercial banks create more purchasing media (currency or checking accounts) so that services also may be more readily sold? In order to answer this question fully, several aspects of the situation must be described.

First, the commercial banks create purchasing media to represent things offered in the markets so that those who participated in processing the item, for example, automobiles, may have purchasing media (claim checks on gold in the form of currency or checking accounts) representing their respective shares in the item offered for sale. The purchasing media created and loaned to an automobile manufacturer who has shipped cars to market may be distributed to assembly-line workers, suppliers of materials, white-collar workers, stockholders, and others who are entitled to a share of the factory's output. The barber or other provider of services usually has no such problem. In fact, some such as opera singers collect from the public before the performance is given. The automobile manufacturer needs purchasing media, while his cars are being offered for sale, in order to distribute shares to those entitled to them; but the provider of services in almost all instances receives the purchase price as soon as, or in some instances even before, the service is rendered.

Second, creating new purchasing media for prospective buyers of services, rather than for sellers of them, would put such purchasing media in circulation until the buyers chose to repay. In passing from one hand to another such added purchasing media could be used to buy things already represented by other purchasing media in circulation. Note that sellers who obtain newly created purchasing media from the banks, as when bills of exchange are discounted (borrowed on) repay as the items are sold, thereby removing from circulation the purchasing media created to represent the things before they were sold. The original credit to the seller's checking account is first reduced by distributing purchasing media to those entitled to a share; then the receipts from the sale are deposited or added to the seller's checking account; finally, the banker debits the account (subtracts from it) the face amount of the original note, thereby canceling the purchasing media originally created when the loan was first made, i.e., when the note was discounted.

Third, those who have claim checks representing things (including gold) in the markets choose to forego buying

^{*}Murray N. Rothbard, *What Has Government Done to Our Money?*, Larkspur, Colorado, Pine Tree Press, 1964.

some of the things they might have purchased and instead transfer some of their purchasing media (claim checks) to people offering services, who then buy the things not purchased by the first holders of the claim checks. In effect, each person offering a service is suggesting to those who have claim checks representing things offered in the markets: "Do have a haircut, or a seat at the opera, or whatever service I offer and let me have the food or clothing or other things in the market represented by the claim checks you can use to buy my services."

INTERMARKET TRADING

In a market area not far from the first primitive market area described, the cost of producing wheat was less because the valley land was richer. On the other hand, beaver skins were available in larger quantity with less effort in the first market area because of the many hillside waterways where beaver could be trapped. In the second market area the exchange value of wheat for gold decreased (the price of wheat declined), and in the first market area the price of beaver skins was lower than it was in the second market.

Even in the days of simple barter, exchange values of wheat and skins in the two markets had differed. But with regular use of gold or claims on gold as purchasing media, the difference in exchange ratios (price difference) became more apparent and the advantages of regular trade between the two areas became obvious. Thus inter-area commerce increased to the mutual advantage of all concerned.

At first the goldsmiths wondered whether or not the supply of gold would be adequate for the increasing number of exchanges and growing volume of commercial banking for which many more claim checks on gold were needed. But as the goldsmiths became better known, more gold was brought to them for safekeeping. In addition, producers took advantage of new inventions stimulated by the general advance of a trading civilization. Crude pumps were developed to provide water for hydraulic washing of gravel, the new wheeled carts lessened costs of hauling supplies, etc., and other costs of producing gold were similarly lessened. Thus gold production was stimulated.

In addition to their lending to merchants, which was still continued, the goldsmiths began creating and lending claim checks on gold to traders shipping from one market to another and to processors of wheat and skins, such as the millers and furriers. For a time the goldsmiths were careful to apply the basic principle of commercial banking, i.e., that each new issue of claim checks on gold created for a borrower should, in effect, represent either additional gold received by the goldsmiths or other things being offered in the markets.

SAVINGS DEPOSITS

In time some of the people employed by manufacturers, merchants, and traders found that their wages and salaries would buy more than their immediate needs for consumption. Consequently, they began to save and invest part of their incomes. At first, they invested directly in new houses to rent and in other productive things, but later some of them realized that the goldsmiths were in a position to make such investments, safeguard the documents concerned in their vaults, and exercise continuing supervision. By mutual arrangement the goldsmiths then undertook to receive such savings and invest them. For example, a salaried executive would bring part of his salary each month in the form of claim

checks on gold to the goldsmith. A record of this deposit was made by the latter; this record was known as a savings account or time deposit.

Of course, the purchasing media in the form of claim checks received by the goldsmiths from savers were already in existence; those claim checks had been created and issued originally by the goldsmiths as commercial loans were made; some individuals who had received the claim checks from the merchants and other borrowers chose not to buy some of the things in the market but to deposit some of their claim checks at the goldsmiths; consequently, things that those claim checks represented still were for sale in the markets, and those claim checks, although the same in all outward appearance as other claim checks, could be loaned or invested by the goldsmiths in other than commercial loans. As far as those claim checks were concerned, the goldsmiths could safely disregard the commercial-loan principle, because those claim checks had been issued in the first place to represent things being offered and *still available* in the markets. Of course, the goldsmiths promptly invested or loaned those claim checks, and anyone who borrowed them from the goldsmiths could find things of equivalent value already in the markets for him to buy.

Readers may wonder whether the goldsmiths might not become confused by making two types of loans with similar claim checks. To avoid this possible confusion, the goldsmiths kept an exact record of the savings deposited with them. Consequently, they always knew precisely how much they could invest in bonds, mortgages, or other loans that did *not* involve simultaneous offerings of things in the markets.

INFLATING

Thus far, the possibility of departure from the basic principle of sound commercial banking has not been described in detail. At least a summary description is necessary.

During a period of peace and general prosperity when markets were functioning well and the goldsmiths were actively conducting their usual business of both commercial lending and investing savings entrusted to them, an unusual event occurred. A would-be borrower who had nothing to offer on the market desired one of the new chariots then becoming fashionable. He asked his goldsmith friend for a loan, but was at first told, "I am sorry to disappoint you, but my records show that all the savings deposited with me already have been invested. As you can understand, a loan to you for the purpose you have indicated would not be a commercial loan because you would not be simultaneously offering anything on the market from which the proceeds of sale would repay the loan. Therefore, I should not create and issue new claim checks on gold in order to lend them to you. Until I receive more savings, I should not lend to you for such a purpose." (Savings are brought to the goldsmiths in the form of claim checks that the owners do not wish to spend but are willing to have others spend if they will repay later.)

The would-be borrower, a long-established customer of the goldsmith's, had his reply ready. "I realize that what I am asking is unusual, but what harm can result? If you fear for the safety of the loan, I can give you a chattel mortgage on the chariot I buy; it will serve as security for the loan. If I fail to repay when the note falls due, you can repossess the chariot and reoffer it on the market yourself. Moreover, I am willing to pay an unusually high rate of interest. You will be well protected and can profit

by the arrangement.”

Now the goldsmith in this instance, although by no means stupid, was not well-informed on the principles of sound commercial banking. He had fallen into the habit of thinking more about the security for his loans than of their purpose. Finally, he had had no experience with and could not foresee the consequences of departing from the basic principle of sound commercial banking. He therefore issued some additional claim checks on gold and loaned them to the persistent borrower. Thus was inflating begun.

As soon as the borrower had the claim checks in his hands he rushed to the market and bought one of the few chariots then available. Within the next several days, other individuals who in the usual course of events would have purchased chariots likewise sought to buy. The chariot merchant realized that demand for his products was exceeding the supply; his haggling over prices altered in tone with the result that chariots soon commanded higher prices.

The chariot merchant then dispatched a letter by mounted messenger to the manufacturer of chariots ordering an additional number for early delivery. The manufacturer was so pleased with the increasing evidence that his products were finding favor in the seemingly more affluent society that he decided to push ahead with plans long under consideration for expansion of his manufacturing facilities. He went to the goldsmith and proposed to borrow on a large scale by giving either his note or bond (another form of promissory note) in which the goldsmith could invest savings at his disposal.

MORE INFLATING

The goldsmith's reply was, "I can see how advantageous your early expansion seems to be; but, unfortunately, I have already invested all the savings at my disposal. In fact, my noncommercial, investment-type assets (holdings of bonds, mortgage notes, etc.) already exceed the savings heretofore deposited with me plus my capital funds. You will have to wait until additional savings are brought to me for investment."

But the chariot manufacturer was eager to proceed; consequently he urged, "Your loan will be well secured. Within a year at most, I shall be producing additional chariots from the new plant, and in 8 or 10 years your loan can be repaid in full. Surely, what I am proposing is a sound loan."

Thus the goldsmith was finally persuaded to create more claim checks on gold and lend them to the chariot manufacturer. The latter then started bidding for labor and construction materials in order to construct his new plant. Of course, the new purchasing media thus made available to purchase things in the markets were in excess of the gold-exchange value of things then being offered in the markets for sale. Inevitably, competitive bidding forced prices and wages up. In this community a period of boom prosperity began. All makers of things found demand in the market place suddenly increased; all tried to increase their plants, and all bid for scarce materials and labor at higher and higher prices. The goldsmiths were urged to make more and more noncommercial loans at higher and higher rates of interest, and the more they disregarded the "old-fogey" principles of sound commercial banking, the more their new-found "wisdom" seemed justified by the turn of events.

At least, such were the effects at first. Then subtle changes in past procedures began to appear. Merchants in this market area discovered that they could buy at lower

prices in other market areas. First wheat, then skins, and finally even chariots were being brought in from adjacent market areas in large quantities. The local merchants of course had to pay for the things thus brought in, and they gave the claim checks on gold issued by the local goldsmiths.

Then the goldsmiths made an important discovery. Formerly, few of the claim checks they issued were presented as demands for gold. Most claim checks had returned to the goldsmiths as merchants repaid loans and then were reissued for new commercial loans. Almost no one in the local market had seemed to want gold. However, the goldsmiths in other markets (Communities B, C, etc.) had no use for the claim checks issued by goldsmiths in the market where prices (exchange values of other things for gold) had increased so greatly; consequently, the claim checks were presented as demand claims for the gold held by goldsmiths in Community A.

At first, the goldsmiths in Community A were not concerned about the outflow of gold from their vaults. Occasionally in the past, claim checks had been presented for their gold, and they had encountered no difficulty in satisfying the desires of those who, for one reason or another, wished to hold gold. In this instance, however, the demand for the goldsmith's gold persisted. Soon the gold left in their vaults was far below the amounts that they formerly had considered reasonable in relation to claim checks outstanding.

DEFLATING

At this stage, the goldsmiths in Community A became alarmed. Unless some way could be found to alleviate their situation, they soon would be bankrupt. First, they turned to the borrowers who were building new factories or who had bought new chariots and urged them to repay their borrowings. But the manufacturers told the goldsmiths, "Surely, you remember that we have bought bricks and mortar with the claim checks you loaned to us. Someone else has those claim checks now, and we shall not be able to repay for a few more years." And those who had borrowed to buy chariots said, "We simply cannot repay the claim checks we borrowed until our future earnings are received in the months ahead."

Finally, in desperation, the goldsmiths turned to the merchants and said, "We cannot lend you more claim checks to buy more goods; we must have repayment of our outstanding loans to you that soon will be due." Then the rush to liquidate began. Merchants marked down prices in order to persuade more shoppers to buy with claim checks that could be used to repay loans. Merchants canceled orders for things from manufacturers in order to avoid becoming obligated for incoming goods. Manufacturers reduced production, and the number of unemployed in Community A greatly increased.

As prices generally fell, prices of secondhand chariots declined rapidly. Soon some of the goldsmiths in Community A realized that their loans secured by chariots were "frozen" because the borrowers were unemployed and the chariots involved were worth much less than the unpaid loans. These goldsmiths repossessed chariots and sold them at auction, but the proceeds of such sales were insufficient to cover the unpaid loans. Some of the goldsmiths then realized that their own capital, and more, had been lost; they too were bankrupt and were forced to close their doors to the dismay of many savings depositors and of others who still held the claim checks on gold issued by those particular goldsmiths.

GOLD PRODUCTION

One of the interesting developments during the days of boom prosperity and afterward was the trend of gold production. When businessmen generally were frantically bidding for raw materials and labor at rising prices and wages, gold production markedly decreased. The reason was not difficult to ascertain. From the viewpoint of the gold producers, the prices of everything they had to buy and the wages they had to offer in order to attract labor rose rapidly. The gold producers thus were forced to discontinue producing in all but the richer gravel deposits and mines. Labor and new machinery that might ordinarily have been used in producing gold were diverted to other activities.

Later, after prices generally and wages had fallen extensively and many were unemployed, gold miners found that old abandoned mine shafts and gravel deposits could be worked again. Even placer mining by individuals became popular.

Some of the economic theorists in this society had become concerned during the early days of the depression and developed learned theories about the "shortage" of gold, blaming that for the depression difficulties. However, their books hardly were published before gold production was stimulated again as described above and increased to levels never before reached.

With our understanding of the entire situation in Community A, we can see that the decrease in gold production was desirable. It tended to discourage further issuance of claim checks on gold by the goldsmiths when they already had issued too many. Moreover, the subsequent increase in gold production during the depression had the opposite effect in that it made more gold available to the goldsmiths and encouraged them to create more claim checks on gold. For all new gold delivered to the goldsmiths they gave claim checks that were purchasing media, which made possible increased demand for other things. In addition, as their gold holdings increased once more, the goldsmiths were in a better position to resume commercial lending.

THE DIVERGENT VIEWS

Returning now to our reference to the blind men describing the elephant, we readily can see how various economists have happened to offer divergent views on money-credit problems.

1. Some economists have focussed attention on the fact that claims on gold have greatly exceeded the gold held by bankers. They have been blind to the fact that a large part of the claims on gold, although in the same form as the claims on gold issued for gold deposited, actually represent other things offered in the markets. These blind men argue for 100-percent reserves.

2. Some economists have focussed attention on the deflating process and have been blind to the fact that deflating does not occur unless there has been prior inflating. These blind men argue for an ever-expanding money supply at some rate that seems to them reasonable.

3. Some economists have focussed attention on the loss of purchasing power during a period of inflating by savers, holders of life insurance, etc. These partially blind men argue for restoration of the gold standard with claims on gold redeemable on demand, but too often they fail to consider what has happened during the prolonged inflating and fail to suggest a practicable means to restore sound commercial banking.

4. Some economists have focussed attention on the seeming shortage of gold during a prolonged period of inflating. These blind men argue that somehow gold is at fault, that it is a "barbarous metal" seemingly perverse in its restrictions on their freedom of managing the "money supply." They apparently do not realize that the seeming shortage of gold is simply a warning that unsound commercial banking has once again been continued for too long.

FINDINGS OF FACTS SOURCES OF PURCHASING MEDIA

The purchasing media available to the public in the United States include all coins, the paper currency (consisting largely of Federal Reserve notes but including Treasury currency), and checking accounts (or, as the banks label them, demand deposits). On the other hand, promissory notes are not purchasing media, but are a promise to deliver purchasing media at a future date. Similarly, the retailer who orders goods from the wholesaler does not make use of purchasing media when, on receiving the goods, he gives an implied promise to pay in the future by requesting that the goods be charged to his account. All purchasing media in use, or that someone holds available for use, have come from one of the sources described in the paragraphs that follow; and all new purchasing media that may be created probably will come from one of these sources.

The first and an important source of purchasing media is the thing chosen as the basic or standard purchasing medium. In the present industrial civilization, the money commodity is gold. (We shall use the phrase "money commodity" as a shorter and more convenient label for the thing used as the basic or standard purchasing medium.) In fact, the qualities of this commodity that make it a desirable basic purchasing medium have been recognized for thousands of years. Only during the 19th century, however, did gold become the money commodity for such a large portion of the world's population as now uses it.

In spite of the so-called departure from the gold standard, gold is still the money commodity of modern civilization. There is no need here to trace its history, nor to forecast its remote future. For our purposes at this time we need only point out that existing gold held as reserves of the various banking systems actually is being used as purchasing media, and that new gold, except that used in industry and the arts, becomes purchasing media, although it may circulate in an altogether different form than the gold coins or gold certificates that formerly were available.

When the Treasury acquires gold the seller receives a check drawn on the Treasury's account; and, except when a gold sterilization policy was in effect for several months after December 1936, the Treasury ordinarily counterbalances these drafts against its checking account by depositing certificates representing the gold with the Federal Reserve banks. The effect is the same as though the Treasury first had deposited a certificate representing the gold in the Federal Reserve bank, and had then drawn a check against that bank in the amount of the value of the new gold. When the seller of the gold deposits the Treasury check for credit to his own account in his local bank, his checking account is thereby increased. The local bank in turn deposits the Treasury check in the nearest Federal Reserve bank, and thereby increases its reserve account.

By this means purchasing media equivalent in value to the gold sold to the Treasury are made available to the seller; and, when he uses the funds to buy something desired, the purchasing media pass on to someone else and thus remain in circulation. Furthermore, if the reserves of the member bank involved are increased by the new credit to its deposit at the Federal Reserve bank, the member bank is tempted to expand its loans or investments, in order to use the excess reserves profitably, thereby increasing still further the purchasing media in circulation.

OTHER SOURCES

A second source of purchasing media is the commercial lending function of a commercial banking system. The borrower whose note is discounted receives a bookkeeping credit to his checking account that is not previously deducted from someone else's account. This action places at his disposal new purchasing media (in addition to those previously existing) that represent things that the borrower offers in the markets and that therefore are not inflationary.

The third and fourth sources of purchasing media are also the commercial banking system and also involve a bookkeeping credit to the borrowers' checking account as in the commercial lending mentioned above. However, purchasing media derived from these sources do *not* represent things that the borrower offers in the markets. The loans involved thus are investment-type assets of the commercial banks.

Our research on banking data has made possible estimates of two important categories of loans of this type. Commercial banks make term loans for period of a year or more (often 5 to 10 years), which are much longer than the periods of time required for offering things in the markets. Purchasing media so created are used for buying new plant and equipment or for other investment purposes. Thus, they do not represent things being offered in the markets and are therefore inflationary.

Another important source of inflationary purchasing media originating in the commercial banking system that was revealed by our research is short-term speculative inventory loans. The commercial banks sometimes have created and loaned purchasing media that manufacturers and other processors used for buying stocks of things that they did *not* offer in the markets. Instead, the businesses held the things in their inventories in the expectation that their prices would increase later. The additional purchasing media created for buying the things thus are inflationary.

The fifth source of purchasing media is the currency issued by the Treasury in the form of United States

notes, Treasury notes of 1890, Federal Reserve banknotes, national banknotes, dollars, subsidiary coin, and minor coin. Because this kind of currency is created by the direct action of the Treasury and does not reflect either an increase of gold or in other things coming to market, the Treasury currency is regarded as inflationary purchasing media.

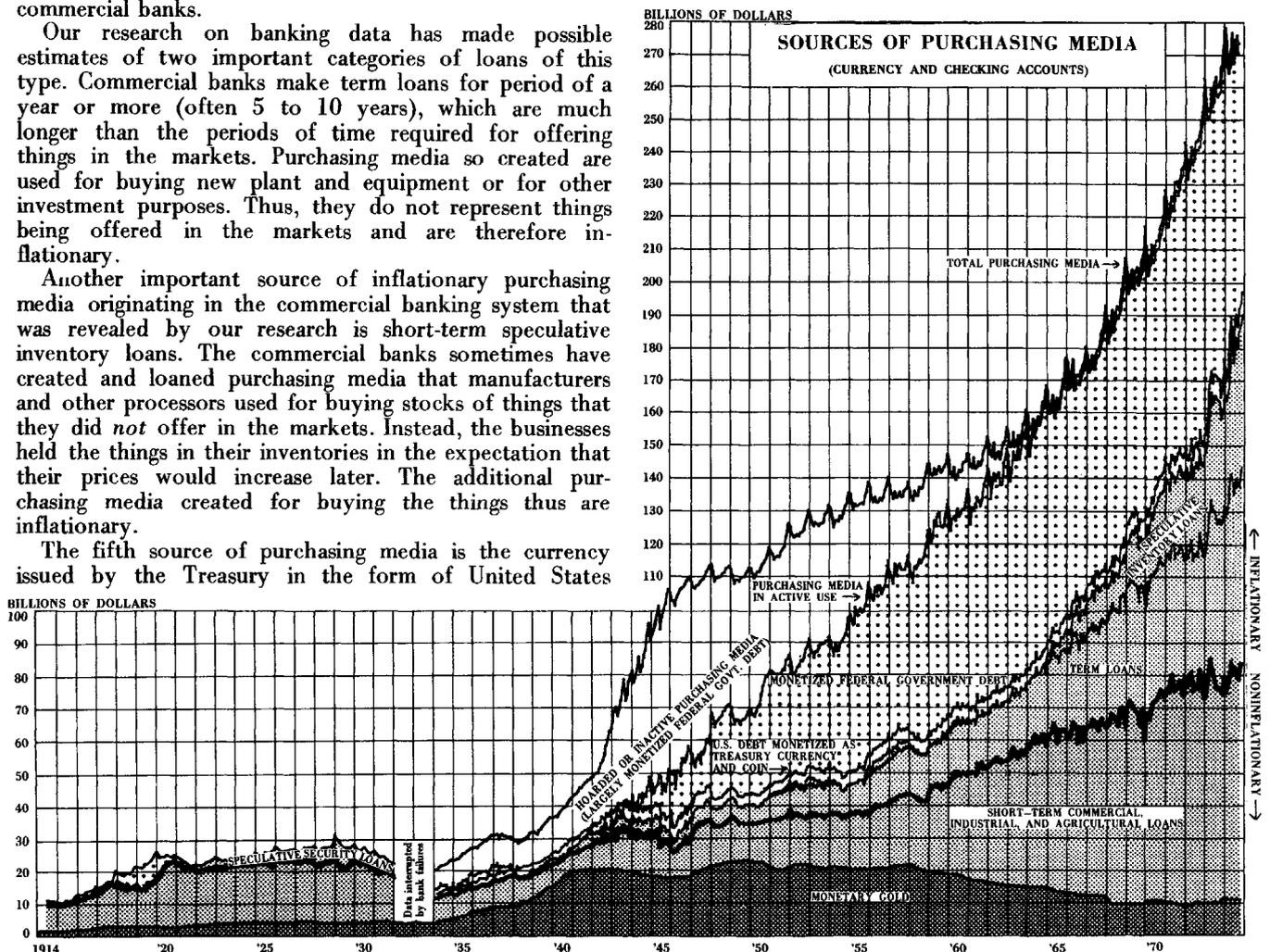
The sixth source of purchasing media is the commercial banking system's investment in Federal Government obligations to the extent that such investments exceed the capital and saving accounts of commercial banks that are available for that purpose. We refer to this source as "monetized Government debt," because the Federal Reserve and commercial banks created *new* purchasing media in exchange for these Federal debt obligations.

Turning now to the accompanying chart, the reader will find that the six sources of purchasing media are differentiated by contrasting shading in order to facilitate an understanding of the situation. The data shown are for bank call dates during the years prior to 1932, and monthly beginning with 1934.

GOLD AS A SOURCE OF PURCHASING MEDIA

As is apparent from the chart, the money commodity is the source of the relatively stable portion of the circulating purchasing media. Just prior to the 1914-18 World War, the total was approximately \$2,000,000,000. Subsequent changes prior to early 1934 were gradual; but

CHART V



in that year a sharp upward trend began as a result of the influx of gold at a higher price per ounce following devaluation of the dollar; and the trend continued upward until 1941.

The rapid upward movement of commodity prices in late 1936 and early 1937 discouraged gold mining by increasing costs. For several months at that time, the rate of increase in gold production diminished, but the drastic deflating of late 1937 and early 1938 brought a decline in commodity prices. Gold production was again encouraged, and the volume of gold imports trended upward more steeply than before. The flight of gold to this country from Europe and elsewhere in late 1939 and 1940 accentuated this trend.

A peak in the Treasury's gold holdings was reached in August 1949, when stocks totaled \$24,600,000,000. By early 1972 the gold holdings had decreased to about \$10,400,000,000.

Although accurate records of gold production throughout the world have not been available for much of the war period, estimates that probably are not far from correct have been made. From the maximum of about 42,000,000 ounces in 1940, production decreased to less than 24,000,000 in 1945. In part, this reflected wartime closing of gold mines because of manpower shortages, but the principle cause of the decrease was the rising cost of gold mining. The wartime inflating in the major industrial nations of the world caused higher prices for equipment and higher wages for labor. After the war, gold production increased as operations were resumed in mines forced to close during the war.

World gold production accelerated during the 1950's, when new mines in South Africa began production. However, rapidly increasing costs forced some marginal mines to close late in the 1960's, and the rate of increase in gold production diminished then. After reaching a peak of 48,400,000 ounces during 1970, annual world gold production decreased during subsequent years. This development reflected a shift to lower grade ores that could be mined profitably because of higher prices obtainable for gold in free markets.

COMMERCIAL LOANS

During much of the period covered, commercial loans

of the banking system have been a principal source of purchasing media. Under ideal circumstances, all the available purchasing media would be derived from the money-commodity source (gold) and commercial loans. Then, all purchasing media that appeared in the markets for things and services would in effect be tickets representing things (either gold or other things) that were being offered for exchange in the markets, and the buying and selling processes would be nearly as simple as direct barter. Provided there were no counterfeiting of tickets (purchasing media), a balance necessarily would exist between demand for all things and the supply of them. However, something very much like counterfeiting actually does occur, as was explained earlier.

AN INDEX OF INFLATING AND DEFLATING

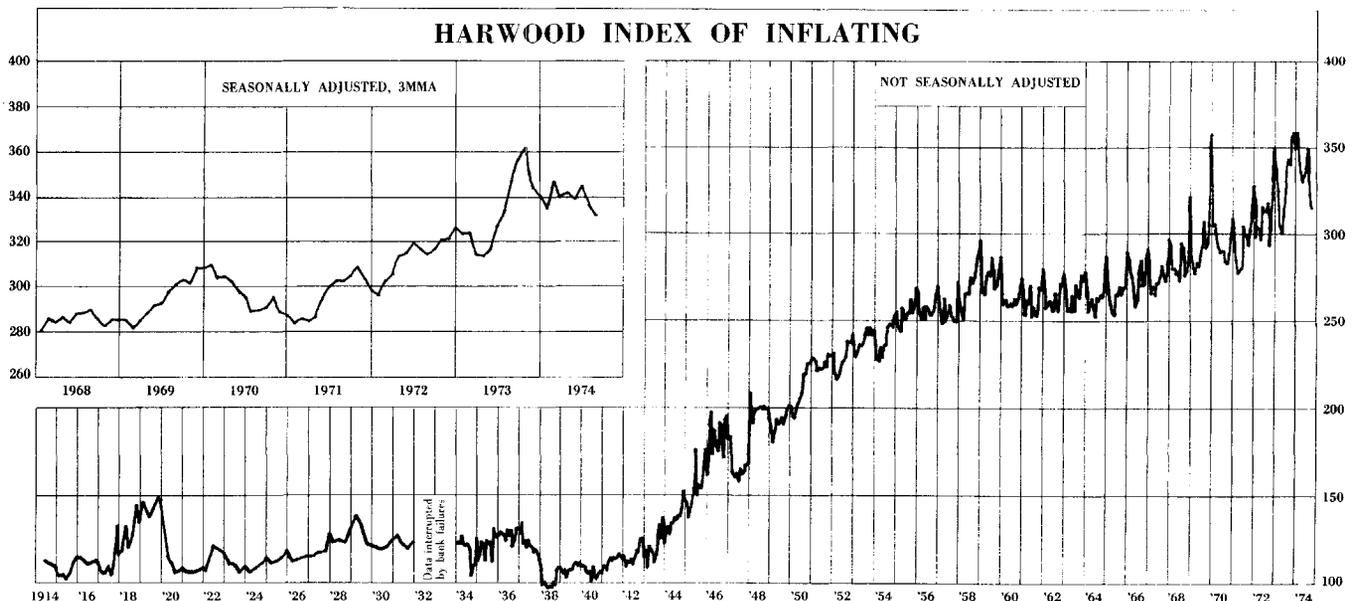
In order to know when inflating and deflating are occurring and how much of the purchasing media in use at any time is inflationary, a measuring device is desirable. Any excess or deficiency of purchasing media must appear in the demand deposits (checking accounts) of the commercial banking system or the record of currency in circulation. Data for all commercial banks in the country must be included.

The absolute amount of the excess purchasing media in circulation can be determined by subtracting from the total of investment-type assets the liabilities such as time deposits and capital funds that justify those assets. The difference found constitutes a net addition to the total of demand deposits (checking accounts) that is not representative of gold or of other things offered in the markets. The trend of this difference, if upward, reflects more inflating and, if downward, reflects deflating.

THE DATA SHOWN

The Harwood Index of Inflating reflects the amount of purchasing media in excess of that which represents gold and other things in and en route to markets. The index shown in the accompanying chart is computed by dividing the purchasing media in use (active checking accounts plus currency) by the noninflationary purchasing media. Thus, the index is a measure of relative inflating or deflating, i.e., it reflects relative changes in the amounts of inflationary and noninflationary purchasing media in

CHART VI



use. The curve is discontinuous during the period of 1932-33 because of inadequate data and the chaotic conditions resulting from the numerous bank failures.

The chart shows four major periods of inflating between 1914 and the end of World War II. The subsequent deflating began in late in 1919, early 1929, early 1937, early 1947; but the last was soon followed by renewed inflating that brought the index to a peak at the end of 1950. During the 1950's, substantial inflating occurred that was interrupted only temporarily by brief periods of deflating. Relative inflating did not occur during the early 1960's, but substantial inflating was resumed in the middle of that decade. This trend was interrupted by some deflating during 1970, but inflating continued subsequently.

In general, the index of inflating has been a "leading" indicator of business-cycle changes. (That is, cyclical

"highs" and "lows" have been reached by the index prior to the "highs" and "lows" of general business activity.)

When the research on the Harwood Index of Inflating was begun 48 years ago, published banking data were most unsatisfactory. Computation of the index involved a substantial margin of error, and unfortunately the magnitude of the error usually was unknown. Nevertheless, trends of the index over periods of a few years apparently were significant. The absolute level of the index remained obscure, even when its general trend apparently could be ascertained from month to month.

In recent years, marked improvements in the reported data have occurred. Apparently, the Federal Reserve Board's statisticians and others belatedly have recognized the significance of certain data required for useful analysis of the money-credit situation.

III.

THE BASIC MALADJUSTMENT

INCOMES VS. PRODUCTION

IN general, current money incomes represent current production, or value added to goods produced; for example, by transportation. That this is true in the long run is shown by the fact that incomes buy all goods that are produced (after allowance for wastage, spoilage, etc.). The wages and salaries of the employees, plus cost of materials, dividends, replacements, and additions to the reserves and surplus held by businesses, are equivalent in value to current production. In other words, the payments to all individuals and agencies concerned are simply representative of the respective shares of goods produced. (We are not here concerned with the equity of the distribution. The point is that one hundred percent of the value of current production is distributed somewhat as outlined, by means of the money-credit mechanism.)

Parenthetically, and in order to avoid possible confusion, we should note that individuals not directly concerned in the production of tangible goods, or in increasing their value (as by maintaining retail inventories of them), acquire their titles to such goods by rendering services to others in exchange for the titles to goods held by them. This is but

another way of saying that the purchasing media (either currency, or demand deposits subject to check) that are received by physicians, lawyers, civil servants, army and navy personnel, and others, are handed over to them by those who do have a direct claim on current production.

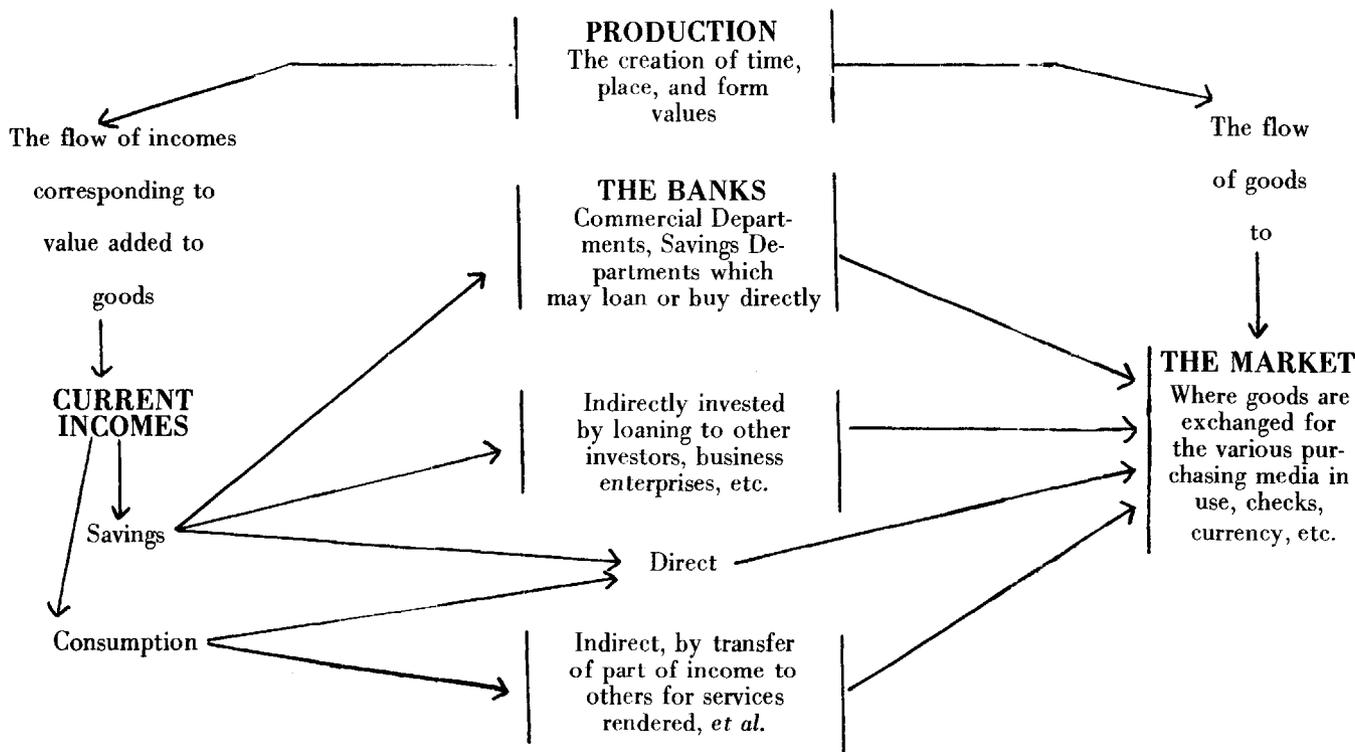
From the preceding section, one can see that the ideal situation exists when incomes are used to buy goods in the markets and, according to the choices exercised by buyers, consumers' goods and capital goods are purchased at such prices and in such quantities that all incomes are spent and all goods are sold. Inasmuch as the total flow of incomes presumably is equal to the value of the parallel flow of goods, the two can exchange for each other in the market. But this ideal situation seldom exists because of the presence of certain disturbing influences.

In order to make clear what happens when the money-credit mechanism is functioning properly, an illustration of the process has been prepared, and is shown in the accompanying diagram I.

With this understanding of the productive process in general, and of the distribution-by-exchange mechanism of which the money-credit system is an important feature, the next step is to see if there is any possible solution to the fundamental problem as originally stated. The

Diagram I.

PRODUCTION AND DISTRIBUTION (GENERALIZED)



problem was restated in the form of a question near the end of Section I, as follows: How is it possible for an excess of purchasing media in relation to current production to be in existence at one time, and how can there be a deficiency at another time?

A SIMPLIFIED EXAMPLE

In order to present this vital maladjustment in its simplest aspect, the complex economic scheme has been reduced to a readily comprehended counterpart. For example, innumerable as the products of the agricultural and industrial realms are, the basic principles involved may be illustrated by dealing with a simple society producing only three different products. Let these be food, clothing, and machinery (the last being the capital goods used in producing the first two). In this simplified social organization, it will be sufficient if there is one landlord who owns all natural resources, including the site value of land, and if there is one capitalist, an individual who has legal title to all of the production goods (capital) in use. Possibly, it will be better to have three banks, A, B, and C, respectively. Three individuals serving as salaried managers of the three-types of businesses and nine wage earners will round out the personnel required. The situation will be further simplified if retail sales are assumed to take place where the three articles are produced.

Near the end of (for convenience) a five-day week, each of the three industries concerned will have its production for the week on hand. Each of the managers thereupon approaches his respective banker with a statement showing current assets in the form of retail inventory for Saturday's marketing, and requests that his account be credited with the gold equivalent (or current value). Of course, the manager signs a note for the amount involved and leaves it with the banker.

The checking account of each business concerned is then credited with the proceeds of the note signed by its manager. By simply writing out checks, each manager then turns over to the landowner, the capitalist, the wage earners, and himself various sums, which total all that he has just received. (Minor differences in the distribution, such as retaining part of the funds for use in the business, do not affect the underlying principles.) All the individuals concerned deposit the received checks in the banks on Friday evening. The result will be to reduce the demand deposits of the three businesses, but there will be an equal amount of deposits subject to check by the various individuals. There will perhaps be some transferring of checks, and it is conceivable that, if most deposits are made in one of the three banks, the other two will have adverse clearing-house balances temporarily¹. The condition will not last long, however, as will shortly be demonstrated.

An arbitrary distribution of the purchasing media here involved will be designated in order to illustrate the principles concerned. Three hundred dollars will be a satisfactory amount, and it may be assumed that this was the total of the three notes, each having been for \$100.00. (In other words, each industry produced \$100.00 worth of goods during the week in question.) The distribu-

tion of the sum may be assumed as follows:

	<i>Total</i>
To each banker (interest or discount)	\$30.00
To the landlord (from each industry)	60.00
To the capitalist (from each industry)	60.00
To the manager (of each industry)	60.00
To each of the nine wage-earners	<u>90.00</u>

Total \$300.00

In order to avoid unnecessary complications that would in no way affect underlying principles, the following table has been prepared showing an assumed disposition of the purchasing media at his disposal for each individual concerned.

	Spent for Food	Spent for Clothing	Remainder
Banker A	\$5.00	\$5.00	None
Banker B	5.00	5.00	None
Banker C	5.00	5.00	None
Landlord	15.00	10.00	\$35.00
Capitalist	5.00	10.00	45.00
Manager Number 1	5.00	5.00	10.00
Manager Number 2	5.00	10.00	5.00
Manager Number 3	10.00	5.00	5.00
Wage-earners (all nine)	<u>45.00</u>	<u>45.00</u>	<u>None</u>
Total	\$100.00	\$100.00	\$100.00

The managers decide to deposit their respective remainders in the savings department of Bank B, making a total of \$20.00 thus deposited. The landlord decides to purchase \$35.00 worth of newly issued common stock representing part ownership of the three businesses from the capitalist. With the funds thus obtained plus his own \$45.00, the capitalist decides to purchase additional machinery for his businesses. The landlord, after investigating the matter carefully, gives Banker B a first mortgage on the real estate he owns, in exchange for \$10.00 of the savings in the possession of that bank. With this he also buys common stock from the capitalist. The latter, desiring to expand even further, takes the common stock he himself owns to Banker B as security for his personal note, thus borrowing the final \$10.00 of deposited savings. On Saturday morning, the purchases indicated in the foregoing table are made and the capitalist buys the \$100.00 worth of machinery on the market.

By Saturday night, each of the managers of the three businesses will have sold all goods produced and will have \$100.00 on deposit to the credit of his respective business. It only remains for the bankers to debit the three accounts when the notes fall due on Monday morning, and the purchasing media involved will have passed out of existence until needed again. Having served their purpose in the distribution of goods produced, they will simply disappear until more goods are ready for distribution.

THE MAJOR MALADJUSTMENT

The underlying principles of the vast network of finance that appears so complex in real life are substantially the same as in the simple example just given. But there is a major maladjustment that has not been discussed in the simplified explanation above. This maladjustment will now be described.

Reverting to the table of expenditures assumed, let it be supposed that, before the Saturday shopping period, the following events occur: the landlord, believing that ownership of common stock will prove profitable, prepares a first mortgage on his real estate in the amount of \$100.00 and asks Banker A to lend him that amount (instead of the \$10.00 borrowed from Bank B in the first

¹ If any readers unfamiliar with banking processes find this discussion difficult to grasp, I suggest reading an elementary description of our banking system. For this purpose, *The Theory and History of Banking* by C. F. Dunbar or *Money and Banking*, Parts I and III, by Frederick A. Bradford is recommended.

assumption). Banker A has no such sum available in his savings department, inasmuch as the savings of the three managers are in Bank B. However, Banker A is not deterred by that circumstance. Having decided that the first mortgage is good security and that the property is worth far more than \$100.00 under any conditions, he credits the landlord's checking account with \$100.00. In so doing, he originates additional purchasing media to that extent in precisely the same manner that he originated purchasing media to represent the goods produced by the manufacturers. The landlord then buys stock from the capitalist (\$100.00 borrowed plus \$35.00 remainder).

The capitalist is equally enthusiastic about the prospects for his businesses and decides to borrow \$100.00 himself, using some of his stock as collateral. The sum is obtained from Banker B, who thereby originates \$80.00 excess purchasing power. (Banker B already had \$20.00 on deposit in his savings department.)

As a consequence of the transactions just described, the capitalist has a total of \$280.00 with which to bid for machinery on Saturday morning. Either the \$100.00 worth of machinery on the market will sell for \$280.00, or there will be an additional effective demand for such articles in the amount of any possible difference. In either event, production of machinery will suddenly become a very profitable business. The manager will initiate overtime work, extra bonuses for greater production, and the like. Profits will boom, and the purchasing media injected into the channels of trade will raise prices (relatively, at least) and encourage speculation.

Consider the asset and liability showings of Bank A under the conditions just described. There will be an item of \$100.00 as a loan on real estate with no time deposits or other semi-permanent liabilities (savings-type liabilities) to justify the acquirement of such an asset. Bank B will show an asset item of \$100.00 as a loan on securities with but \$20.00 in the parallel item of savings or time deposits. The net result will be a lack of balance between investment-type assets and savings-type liabilities.

Furthermore, under the conditions stated, Banks A and B will have unfavorable clearing-house balances, that of the former being the greater, while Bank C will find that the clearing-house balance will be in its favor. The precise manner in which this situation arises can be plainly seen if it be supposed that, in the distribution of purchasing media last described, the capitalist bids all of the funds at his disposal for the current output of capital goods. The \$100.00 worth of machinery would then be sold for \$280.00 as already mentioned. If the manager of the machinery business had dealt with Bank C in the first place, not more than \$100.00 could have been checked out of that bank, whereas \$280.00 would be deposited to the credit of the machinery-industry's account on Saturday night, thus giving a favorable clearing-house balance of Bank C. Conversely, Banks A and B would find themselves in debt at the clearing-house (or confronted with diminished reserves if a system similar to the Federal Reserve System be assumed).

Of course, until Bank C indulges in credit expansion of an inflationary character to approximately the same degree as have Banks A and B, those two will be forced to borrow in order to settle balances (or to maintain reserves if the Federal Reserve System be assumed). If Bank C does not long delay in putting to work the funds thus unexpectedly placed in its hands, investments or loans will be increased and the excess purchasing media will be returned to circulation where it will make possible

greater demand for goods, rising prices, and windfall profits for businesses.

Because the landlord and the capitalist have obtained the use of the additional purchasing media in the form of bank credit for a short period only, there will come a time when the unbalanced condition will be corrected by repayment of their respective borrowings. Presumably, when that occurs, the excess purchasing media will pass out of existence, just as do those based on goods after the goods have been distributed to the consumer. If such were actually the course of events, the inflationary effects would at least be sharply limited in duration. In practice, however, these borrowings frequently are not repaid when, in theory, they are due. Furthermore, the price rises stimulated by a small degree of inflating, even if apparent only in a limited market, invite further speculation for the rise and further expansion of plant in order to meet what is, for the time being, an increasing demand. Consequently, even larger inflationary loans are sought; and, although some may be repaid, taken by and large they grow in volume with the passage of time and lend further encouragement to the individuals most directly affected.

The process by means of which an inflationary boom tends to "feed upon itself" is readily seen. The industries whose products are most in demand by the individuals and other businesses that have inflationary purchasing media discover that more goods can be sold at rising prices. This creates windfall profits, and encourages the hope of even larger profits. At first, in order to produce more goods, the existing labor force may work overtime. However, this cannot be continued indefinitely, and the next step would probably be the rehabilitation of more or less obsolete equipment and the hiring of unemployed workers, including many who are actually submarginal in the sense that they are not so efficient as even the least capable regular employees in the industry.

Although costs of production necessarily rise under such conditions, the significance of the change may be concealed for a time because cost accounting methods in use fail to reflect the higher costs promptly, or because costs are assumed to be about the same as those prevailing when the plant is operating at its most efficient rate. The realities of the situation are not immediately brought home to the management in the form of dollar and cents losses, because the inflationary purchasing media make possible an increasing demand, even in relation to the increased supply of goods offered for sale, with the result that higher prices produce even larger windfall profits. Such profits on the normal, efficiently-produced, low-cost output may more than counterbalance any losses that are incurred on the less efficiently produced portion of the output.

If demand for the industry's products continues to expand after the steps already described have been taken, the management will be encouraged to use the windfall profits for plant expansion; and in all probability an attempt will be made to borrow from the banks, because windfall profits within a short period will hardly be large enough to finance new plant construction without such borrowing. These additional borrowings from the banking system by business concerns for capital purposes result in the creation of more inflationary purchasing media (except to the extent that such new loans by the banks are counterbalanced by current new savings deposits). When these inflationary purchasing media reach the toolmakers, the workmen who construct the new plant, etc., a still larger effective demand for consumption goods is made possible. Obviously, this cumulative process can

continue until some bottleneck in the production processes obstructs the flow of additional goods to market, or until any of several untoward events (such as the collapse of the speculative boom in commodities, common stocks, or other speculative medium) brings about a reversal of the inflating.

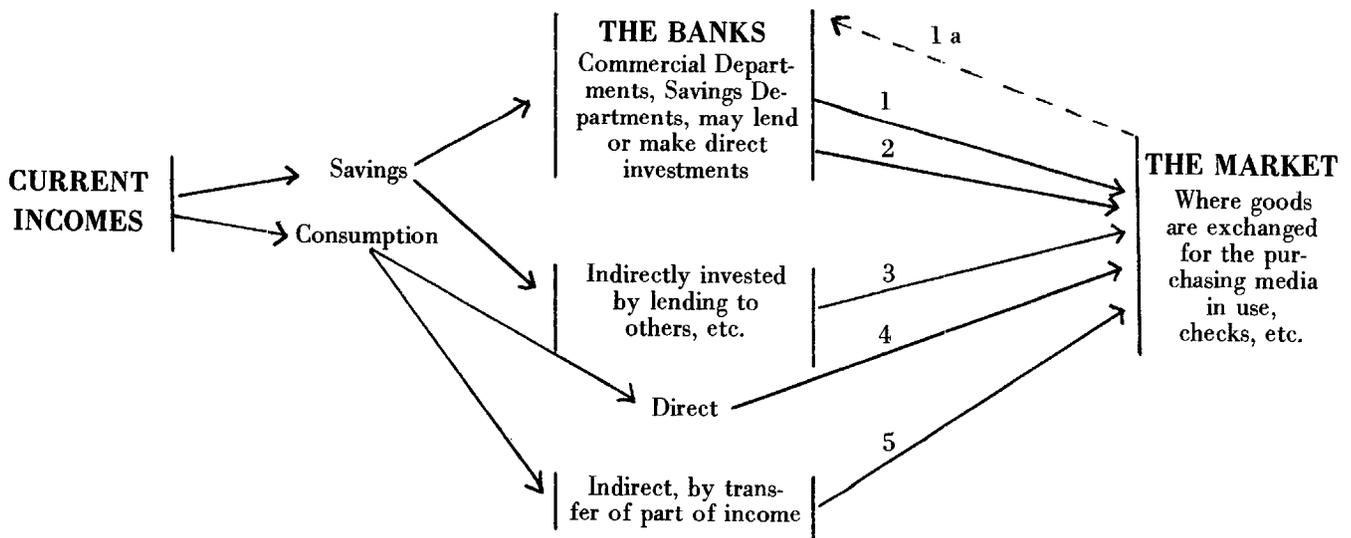
In the absence of definite restrictions on the amount of bank credit that can be originated by a banking system, an inflationary progression of this character may continue to disastrous extremes. There is, it must be plain, a limit beyond which an inflationary progression cannot continue. This limit is reached when the monetary unit becomes worthless. Several European currencies during recent decades have provided examples of this outcome.

However, insuring that an inflationary progression will be halted before the limit mentioned above has been reached is possible. Such is the effect of a legal limitation governing bank reserves. In the course of an inflationary progression, deposits grow at very rapid rate, so also does circulatory currency of the hand-to-hand variety. When both have expanded to the limit permitted by legal reserve requirements, the inflationary spree must end. This condition existed in late 1919, with results that are now history.

DEFLATING FOLLOWING INFLATING

Probably it will be best to carry the simple situation already used through the period of deflating, which must inevitably follow inflating. Referring now to the loans contracted by the landlord and the capitalist, let it be supposed that, the legal limits of credit expansion having been reached, the banks are forced to call loans, or to demand settlement when due, or to sell the loan collateral. Possibly the two individuals concerned in this instance will find that, by devoting a portion of current income to that purpose, they can repay the loans. Should this be the case, purchasing media essential to the artificial price level then existing (including the price of the principal speculative medium) will be withdrawn from circulation. More probably, however, the banks will be forced to sell all or part of the assets securing the loans. The effect of this is to take out of the market a portion of the flow of purchasing media that would otherwise buy goods and securities. The selling movement thus initiated pricks the bubble; prices start sliding (more drastically in the principal vehicle of speculation); and sentiment quickly changes so that

Diagram II.
INFLATING AND DEFLATING



CASE 1. DURING INFLATING

During the period of inflating, the banks invest the savings placed at their disposal, and in addition originate an excess of purchasing media (shown in flow line number 1) by lending to individuals and others on securities and real estate; that is, investment-type assets of the banks exceed their savings-type liabilities.

CASE 2. DURING DEFLATING

During the period of deflating, the banks are selling their excess of investment-type assets (and calling loans) thereby reversing the flow in line number 1, as is indicated by the dotted line, 1a. In both Case 1 and Case 2, the total of flow lines numbered 2, 3, 4, and 5 is equal to CURRENT INCOMES, which in turn is equal to the value of current production. The direction of flow in line number 1 accounts for the excess purchasing media demanding goods during inflating, and the reverse direction of flow indicated by 1a accounts for the corresponding deficiency during deflating.

every effort is made to withdraw the excess purchasing media and repay loans. Bank credit is retired at a rapid rate; overstimulated businesses fall by the wayside; unemployment increases; and depression becomes general.

From the foregoing, one can see that the deflationary aspects of the cycle, as far as business is concerned, may be the simple result of a flow of goods to market that meets a flow of purchasing media reduced below the possibility of a balance between the two by the need of liquidating past excess credit extensions. Thus it is that merchants find their wares going begging, and that repeated price reductions are necessary in order to sell goods currently produced.

The foregoing discussion may be incorporated in a diagram presenting this possible solution of the problem in its two phases, that is, during inflating and again during deflating. In order to make the accompanying Diagram I as simple as possible, only that portion of the

production-distribution process that includes the movement of purchasing media from the time of its receipt as INCOMES until it is spent in THE MARKET is indicated.

Thus far, we have shown only that certain manipulations of the money-credit system are conceivable; and that, if they occurred, they might make possible the extremes of the business cycle. The next step is to ascertain whether or not there actually have been maladjustments of the money-credit system of the character indicated. A conjecture (hypothesis) has been formulated. In order to test its validity, there are two means available. The first is to check the necessary conclusions against observable facts. The second is by attempting to describe the related effects that are known to exist. Fortunately, the solution can be tested by both methods. Section IV deals with the statistical proof of the explanation that has been presented in the form of a working hypothesis.

IV. PROOF

ALTHOUGH the foregoing description seems consistent, the explanation given cannot be considered satisfactory until the facts it points to are examined. The first step in accomplishing this is to decide what facts to observe. From the simple illustration given, one can see that, if the conjecture is correct, the banks originate purchasing media in the form of demand deposits too rapidly during a boom. Because this has been done, retiring deposits from circulation in order to liquidate past excess originations of credit later becomes necessary. As has already been shown, this corrective measure results in a deficiency of purchasing media in relation to current production at the price levels that prevailed during the period of prosperity. The banks had based the excess of circulating deposits on investment-type assets. In other words, the banks lent, on the security of property and goods that were *not* coming to market, more than the accumulated savings at the disposal of the banks justified. The excess of such credit extensions over accumulated savings was a direct addition to the flow of current purchasing media available for use in the market to buy goods. Obviously then, if all banks of the country have assets of investment-type in excess of their savings-type liabilities, there must be an excess of purchasing media available for circulation. If such a condition existed to a marked degree during the boom phase of the cycle, the facts would confirm the conjecture.

STATISTICAL PROOF

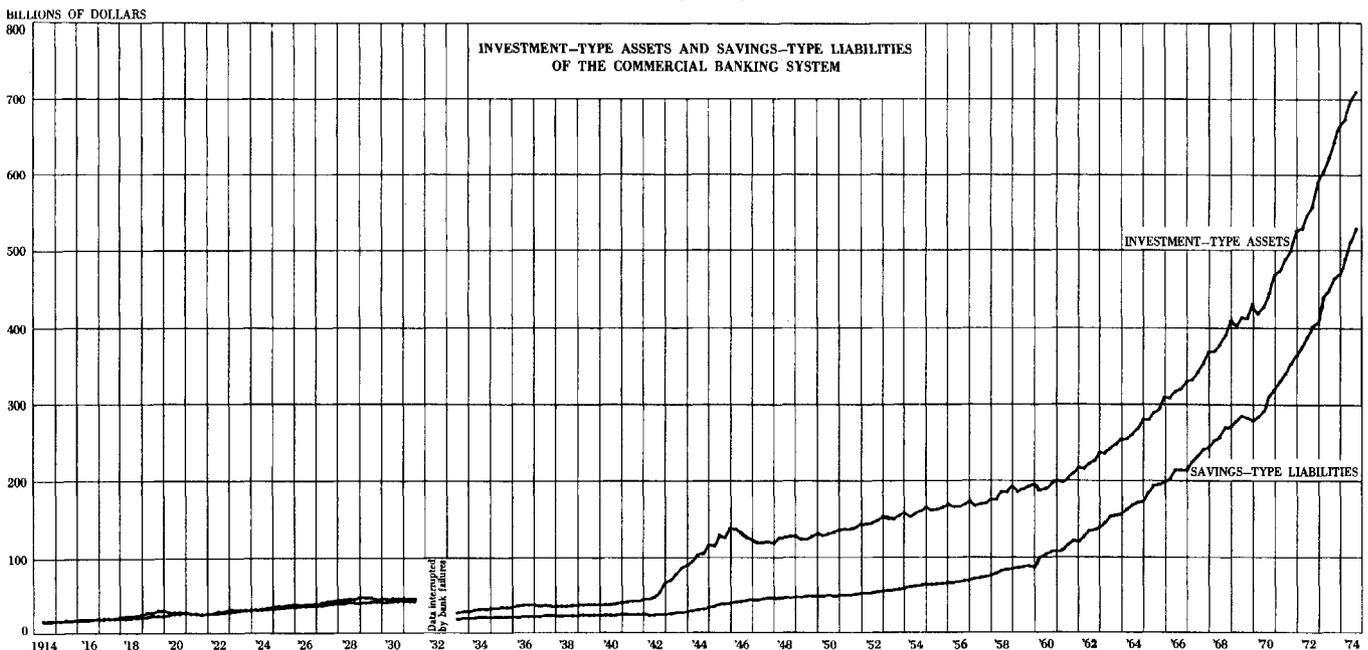
As many people know, statements of the condition of all banks are available periodically. Computing the total of investment-type assets for all banks and comparing it directly with the total of savings-type liabilities justifying such credit extensions is possible. Unfortunately, bank

statements are somewhat complex. For the average reader, the details of statistical analysis would be boring as well as unnecessary. The complete explanation of the statistical work, together with most of the tables of figures and charts based on them, have therefore been removed from this edition. These are available from American Institute for Economic Research at the cost of reproduction. For the purposes of this portion of the discussion, the bare results will suffice.

The accompanying Chart VII shows the investment-type assets and the savings-liabilities of the American Banking system from 1914 to 1974. The accumulation of savings in the custody of the banks has followed a remarkably steady trend during most of the period covered. Chart VI shows the ratio between the total of purchasing media, including the inflationary portion, and the amount that would have been in circulation if there had been no inflating at any time during the period shown. The significance of variations in this curve is important. An upward trend indicates that investment-type assets of the banking system were increasing at a faster rate than savings were accumulating. Conversely, a downward trend indicates that part of the new savings, at the time in question, were being used to liquidate past excess originations of purchasing media. As a result, the rate of new investment at such times was necessarily less than the rate at which savings were being made. This liquidation process can, and usually does, continue until the balance between total savings and total investments has been restored; that is, until the difference between them has been reduced to nothing.

Referring now to Chart VI, the excess of investment-type assets in late 1919 was very great, and similar situations, varying in degree, existed in 1929, 1936 and 1946 and subsequently. This chart reflects the origination of excess purchasing media by the banking system in

CHART VII



precisely the manner suggested in the simple illustration of the preceding section. The chart shows that boom prosperity, high commodity prices, and high security prices have coincided with the marked periods of inflating shown by the Index.

In the simple illustration already given, we pointed out that one of the first effects of an inflationary extension of credit by a bank is an outward flow of funds from that institution. In other words, the banks contributing most to the excess purchasing media in circulation usually have adverse clearing-house balances because funds are flowing out faster than they are coming in. The fact that under the Federal Reserve System adverse balances are debited against the member bank's reserve account forces the member bank concerned to borrow, unless it has excess reserves, by rediscounting at the Federal Reserve bank in its region.

Although the presence of an unbalanced condition (investment-type assets greater than savings-type liabilities) in any one bank would ordinarily result in adverse clearing-house balances funds going out faster than they came in), as soon as all other banks had joined the inflationary progression to an equal extent, the exchanges at the clearing-house would tend to cancel out or offset each other. Therefore, if there were no inflating, one would expect borrowings at the Federal Reserve banks to be negligible. On the other hand, during inflating, such borrowings presumably will increase. Borrowings will not, necessarily, be proportional to the degree of inflating, because all banks might originate excess purchasing media at a uniform rate and the flow of checks by which exchanges were effected would cancel out. However, from the practical viewpoint, such perfect coordination between all the banks is not to be expected. Therefore, increased borrowings by the banks suggest the presence of inflating. The evidence is circumstantial rather than direct, but it confirms the other evidence shown.

ADDITIONAL EVIDENCE

The reader may feel reasonably satisfied, at this stage, with the data and description already submitted. However, the subject is of such vital importance as to warrant examination from all angles and the consideration of all available evidence. There is presented, for that reason, a brief discussion of the work of Carl Snyder, who was associated with the New York Federal Reserve Bank during the latter portion of his lifetime.¹ In addition, there is also indicated still another means by which the basic description has been confirmed statistically.

In the preceding section of this chapter, a portion of the assets of the banks has been compared with a portion of bank liabilities. Inasmuch as total assets equal total liabilities, a comparison of the remaining assets and liabilities likewise reflects the changes noted. The significance of this fact will be more apparent after consideration of the items separately.

In selecting the investment-type assets of the banks, a certain criterion is used: namely, that the security for the credit extension involved is not offered for sale during the period of the loan. The remainder of bank assets are the commercial loans (those based on goods produced or value added to the goods produced, which are to appear on the market during the time the credit is outstanding) and cash or that closely related item, reserves with the

¹ Carl Snyder: *New Measures in the Equation of Exchange*. American Economic Review, Vol. XIV, December 1924.

Federal Reserve banks. Commercial loans are short-term, automatically self-liquidating assets, because the sale of the goods concerned provides the wherewithal for repaying the loan.

In selecting the liabilities used, the criterion is whether or not the item involved represents funds left with the banks for long-term use; or to state it somewhat differently, the item concerned does not indicate purchasing media that are constantly being shifted from bank to bank. In other words, demand deposits, which are circulated by the checking process, are not liabilities justifying investment-type assets.

Inasmuch as the automatically self-liquidating assets represent goods that will shortly appear on the market, and because demand deposits (including currency in circulation) are the purchasing media that will take goods off the markets, there should be a balance between these items (after allowing for that portion of the purchasing media held inactive. In fact, if there is a lack of balance, in so far as the banks are concerned, the prices of goods in free or nearly free competitive markets will be adjusted accordingly.

The usual process of acquiring investment-type assets in excess of the liabilities justifying them is that in which the banks lend and invest more in securities (including government bonds) and real estate than they should (that is, more than they should as long as they fail to liquidate other investments in order to obtain the funds for such purposes). The proceeds of such loans are credited to the demand deposits of the borrowers, with consequent enlargement of that class of liabilities without a corresponding increase of the short-term, automatically self-liquidating assets. Therefore, an excess of demand deposits in relation to the total of automatically self-liquidating assets plus cash or its equivalent is an indication that inflating has occurred.

FURTHER CONFIRMATION

Carl Snyder made elaborate statistical studies that constituted a test of the relationship just mentioned. He found that the annual increment to the physical flow of production had averaged between three and four per cent. In addition, he prepared indexes that reflect the increase in purchasing media available for use. A ratio between these two closely parallels the actual course of prices in the years covered by his study. Unfortunately, the work involved sampling and other statistical short-cuts that invited unfavorable criticism, but the results confirm the theory and data submitted herewith.

In this connection, one should realize that only the banks can originate excess purchasing media. An insurance company, for example, in making loans on policies merely gives the borrowers the use of funds already in its possession. The banks, on the other hand, can actually originate purchasing media in the form of credits to checking accounts. Therefore, *all the differential between total investment-type assets and total savings, for the entire country, is certain to be reflected in bank statements*. The Index of Inflating developed consequently is an all-inclusive criterion, not based on sampling alone, but encompassing *all pertinent data*. Therefore, the basic description is supported by all of the facts, and it is further confirmed in a highly satisfactory manner by several independent statistical observations.

V.

INFLATING AND DEFLATING

THE NEED FOR BETTER NAMING

IN this section, application of the technical names "inflating" and "deflating" will be clarified. The procedures that are called "constricting" and "reflating" also will be described. Although at first thought devoting an entire section to such an explanation may seem unnecessary, the existing confusion on the subject is so great that the time and space devoted to insuring that the terms used facilitate accurate specification will not be wasted.

The necessity for more precise naming or accurate specification can readily be seen from the careless usage of words in current writing. When the Glass-Steagall emergency bill was passed in 1932, there was an uproar of criticism and praise by its opponents and proponents. Some claimed that it would be inflationary in its effects, and others claimed that it would merely be anti-deflationary. The headlines blared forth the news that the country was to be flooded with currency, but currency in circulation subsequently decreased for a short period. Much of the disagreement arose simply because those writing pro and con had not agreed on the technical terms or names to be used. One eminent economist has told me that inflation meant, to him, merely a rising price level; and even a cursory survey of the literature on the subject is sufficient to reveal the unfortunate situation that exists.

INFLATING, HOW APPLIED

In view of the possible course of events illustrated by the simple example used in Section III, and the known facts as set forth by the statistics compiled, firm and consistent use of the word "inflating" is practicable. As has already been indicated, during periods of extreme prosperity the banks of the country have acquired and held more assets of the investment-type than the funds at their disposal for such purposes have justified. The banking system has been able to do this because it can originate purchasing media and either buy investment-type assets directly therewith, or make loans based on such assets to individuals and others. This implies, of course, that part of the purchasing media placed in circulation at such times is not balanced by goods coming to market. "Inflating" is the name applied to the process when the banks or other agencies (such as the Treasury printing press) create purchasing media in excess of those required to represent goods processed (changed in form, place, or time) that are currently available in the markets. (When a Nation is using the gold standard, all of the gold held by the commercial banking system is represented by purchasing media in circulation, and inasmuch as the gold is available on demand to anyone offering purchasing media for it, the gold is among the things available in the Nation's markets.)

The effect of inflating is to place in the hands of individuals and businesses excess purchasing media that ordinarily are used to buy goods of one kind or another. In the absence of goods to balance the excess, buyers bid up prices in general (always relatively to the long-term trend and sometimes absolutely as well). Usually, the resulting rise in prices is especially marked in some

particular class of articles, although its effects spread out to all. Thus, in 1919, the principal speculative medium was the general run of wholesale commodities, while in 1928-29 common stocks were the favorite.

Some of the excess purchasing media (either in the form of checking accounts or currency) remain in the principal field of speculation, rapidly moving from hand to hand as speculators for the rise successively buy and sell, bidding up prices to even higher levels. However, much of the excess is used in the channels of trade. Successful speculators buy new houses, automobiles, and other things. Many businessmen, deceived by the artificially stimulated demand, enlarge plant facilities with funds obtained, in part, from the flood of excess purchasing media. Organized labor demands a higher wage from the businessmen who are participating in the windfall profits. Public agencies are encouraged, by increased tax receipts and the prospects of easy borrowing, to enlarge expenditures. Much new construction, together with highly-forced consumption of current production, is reflected in the statistics of trade as the familiar evidence of boom prosperity.

The excess purchasing media may be originated by the process of discounting notes and crediting checking accounts with the proceeds. (The inflatings during World War I, again from 1933 to 1936, and again since 1941 were accomplished by a modification of this process. Instead of discounting notes, the banks purchased Government bonds and paid for them by new credits to the Treasury's checking accounts.) The rising prices, which at first may appear in only a limited field, invite speculation for the rise, which is accomplished by further borrowing. Finally, the boom is fully developed and sustained largely on the basis of pyramided extensions of credit. Such a situation is vulnerable. A serious disaster of one kind or another has often been sufficient in the past to prick the bubble and initiate a reversal of the process. If something of this kind does not occur, the boom may carry along until the legal limitations of banking reserves have been reached or until rising costs of production force businessmen to curtail operations.¹ This contingency, of course, brings the speculative spree to an end.

DEFLATING, HOW APPLIED

All during the period of extreme prosperity, the banks acquired new investment-type assets at a faster rate than the growth in savings had warranted. The total of investment-type assets therefore, steadily increased relatively to the savings justifying them. The reversal of the process is called "deflating," which may be described as follows: Deflating is the process of withdrawing from circulation the excess purchasing media originated during an earlier inflationary progression.

During the deflationary phase of the cycle, there is a constant drain of funds from the stream of money incomes. The banking system withdraws this credit by selling securities in the open market and by calling loans.

¹ In this connection see Hinshaw, R.: *Rising Costs and Business-Cycle Crisis*, American Economic Review, Vol. XXVIII, December 1938.

During the period of prosperity, prices of goods and services gradually become adjusted to the inflationary condition. Consequently, when the deflationary process begins there are goods on the way to market priced at prosperity levels. Because purchasing media are being retired from circulation by the banks in order to liquidate past excesses, goods coming to market meet an insufficiency of purchasing media; inventories accumulate, and prices must be reduced. Merchants and manufacturers thereby suffer losses and attempt to curtail production and reduce costs. But, as long as the liquidating process is incomplete, the most drastic reductions in wages and other elements of cost yield a temporary advantage only. Although goods may be started to market at much lower prices, the flow of money incomes still is being drawn upon to repay debt, and the cheaper goods in turn find insufficient purchasing media awaiting them.

Deflating does not continue forever, because eventually the balance between savings-type liabilities and investment-type assets is restored. When this point has been reached, the current rate of investment then can proceed in parallel with the current rate of savings. No further drains are made on money incomes to repay old loans of an inflationary character. Unless there is some disturbing factor, recovery proceeds from that time forth.

The process of inflating is a departure from a relatively balanced situation, and deflating is essential in order to restore a balanced condition.² Obviously, there must be a balance between investment-type assets and savings, over the long run. If this were not true, if no serious maladjustments resulted from the inflationary process, then it would indeed be possible to spend our way to prosperity; bootstrapping would be an accomplished fact; and prosperity would become a simple function of the printing press.

In Section I, the suggestion was made that, in the absence of inflating and the inevitable deflationary aftermath business activity would follow its long-term-growth trend with only minor deviations therefrom. The fluctuations of business activity far above and below this long-term trend as a result of inflating and deflating are readily explained. When inflating occurs, demand exceeds supply, and prices rise; windfall profits result; and both individuals and businesses incur debt in the belief that the conditions of extreme prosperity will continue. With funds that have been borrowed, much being inflationary credit, they buy goods and expand the plant and equipment of businesses. During the subsequent deflating, the great expectations of boom days are disappointed, and both individuals and businesses are forced to use part of their current incomes for repayment of the obligations they have incurred. In other words, they are forced to save and pay for the "dead horses" that were purchased during the boom. Under such circumstances, they of course cannot continue even their usual purchases of the goods being produced, and business activity therefore is forced to decrease well below what might reasonably be considered its long-term trend, until the boom-time maladjustments have been corrected.

The effects of inflating and deflating cannot be limited to giving business activity a stimulation that will carry it above its growth trend, and then permit it to fall back to

² Some economists have assumed that, in the absence of inflating, there would be permanent stagnation at depression levels. Such conclusions apparently are based on a misunderstanding of the simple mathematical relationships involved, which are familiar to all who deal with acceleration and deceleration problems in the physical sciences.

that trend line during the deflationary aftermath. The process of deflating involves a drain on current money incomes until the excess credit originations of the boom period have been repaid. While inflating continues, all of current savings (monetary savings) actually move almost instantaneously into the market for goods via the investment process, and they are supplemented by the inflationary purchasing media that are being issued to the banking system. On the other hand, while deflating continues no new inflationary purchasing media are being brought into circulation, and a portion of current monetary savings fails to reach the market for goods; because, instead of moving to that objective via the usual investment process, it is used to retire excess credit originated by the banking system during the inflationary process.

CONSTRICING, REFLATING, HOARDING, AND DISHOARDING

Thus far, we have assumed that the total investment-type assets of the banking system will be at least equal to the total savings available to the banks. The only maladjustment discussed has been that arising from an excess of the total of investment-type assets in relation to savings-type liabilities and the subsequent return to a balanced condition. In theory at least, a maladjustment or loss of balance in the other direction is possible. Therefore, that contingency will be considered.

There are only two possible means by which the savings of the public can be diverted from the investment market. These are: (1) that the banks hoard part of the savings placed at their disposal; or (2) that individuals or businesses hoard currency or demand deposits.

During the depression years, the banks frequently were accused of hoarding. Unfortunately, the word is used loosely at times; therefore careful investigation is necessary before reaching any conclusions. In the first place, mere refusal to make new loans or new investments is not proof that the banks are hoarding. That situation is forced on the banking system during a deflationary progression, and bankers have no choice but to make the best of it. Reserves must be maintained, and clearing-house balances must be met, even if loans must be called and investments sold. Apparently, the only way that banks hoard is to hold large quantities of cash in vault, or to accumulate excess reserves. (This does not imply that the excess reserves accumulated during the late 1930's were evidence of hoarding. They were primarily a result of the arbitrary under-valuation of the dollar in terms of gold.)

An examination of bank statements during the period 1914 to 1932 reveals that there was no hoarding by the banks to account for the depressions that occurred. During each depression, the banks endeavored to better their conditions (to become more liquid), but this does not mean that cash in vault and reserves were increased. Many people have the impression that such was the situation, but a careful examination of the reported facts shows that the more liquid conditions were reached by means of the procedure usually followed when deflating; that is, by the liquidation of securities and investment-type loans.

In the late 1930's, there was an accumulation of excess reserves by the commercial banks, and anyone who failed to consider the accompanying circumstances might assume that this reflected a hoarding tendency. However, the excess reserves accumulated during those years resulted

primarily from an unprecedented gold inflow and secondarily from the purchase of securities by the Federal Reserve banks. The gold holdings of the United States increased by nearly \$7,000,000,000 from 1934 to 1938.

In the late 1930's, an enormous expansion of bank credit occurred, largely as the result of loans to the Treasury by the commercial banks, so that in 1937 and again in late 1938 total purchasing media available to the public exceeded the total in 1929. Obviously, the banks were not hoarding during those years.

The banks were not guilty of hoarding, but the public indulged its fears and distrust of the banks by hoarding on a large scale during 1931 and especially in early 1933. By this means, the flow of money incomes to market was reduced by an amount that, at its maximum, approached \$1,800,000,000. This amount was saved, in the sense that it was not spent, but it was not made available to the banking system for investment nor was it directly invested.

Naturally, the public's hoardings, because they are a sidetracking of current money incomes, affect the sale of goods coming to market in precisely the same manner that deflating does. The difference in the two situations arises from the fact that, although deflating is the correction of an unbalanced condition, hoarding may cause a loss of balance in the opposite direction. It is an abuse of the money-credit system comparable, in reverse, to the inflationary process. Furthermore, the effects of hoarding are especially severe because the withdrawals of currency may cause a drastic liquidation of banking assets several times greater than the amount hoarded. (Hoarding by individuals and businesses is discussed at greater length in the Introduction.)

In order to differentiate between deflating, which is a reversal of inflating, and the results of widespread hoarding, the word "constricting" is used. It is applied as follows: Constricting is what occurs when hoardings are accumulated in such substantial amounts as to cause a marked excess of savings, including hoardings, over the current rate of investment.

Of course, hoarding is an abnormal condition; like inflating, it is a temporary phenomenon. When confidence returns, the hoarders resume their buying or return their hoarded currency to the banking system. Naturally, this release of purchasing media to the channels of trade facilitates a recovery from the depression conditions that resulted from the hoarding process. This release of hoarded funds and the movement towards a balanced condition may be named "reflating."

In closing this section on the application of technical terms, we recognize that the reader perhaps has quite different notions as to suitable applications for such words as "inflating," "deflating," "constricting," and "reflating," respectively. If anyone's preconceptions along those lines are disturbed by the usage herein, let him simply remember that the vital features are the relationships between money-credit factors; that at times the banking system is unwisely used, with resulting excess credit originations that later on have to be liquidated, and that the system may also be abused in an opposite manner if there is hoarding. That the first-mentioned maladjustment, its correction, and the contrary maladjustment actually occur, have been shown by the data already submitted. These various conditions may be labeled according to the reader's fancy, provided he keeps clearly in mind what each process is, as well as whether it is a divergence from, or a return to, a balanced condition of the money-credit system.

During World War II and subsequently, hoarding of currency increased far beyond any previous experience with that phenomenon. Many thousands of war workers apparently preferred to hoard currency rather than invest in Savings Bonds or deposit their savings in a bank. No doubt, many black-market and gray-market operators as well as some ordinary businessmen chose to conceal their earnings from the income-tax authorities by hoarding currency. Much of the dealing in used cars, to name only one of several items, during the years of price control was carried on by gentlemen who carried fat rolls of currency, neither accepted nor gave checks, and apparently kept no books.

However, the total value of the currency hoarded was greatly exceeded by the inflationary purchasing media created during the war years. (See Chart VII, "Sources of Purchasing Media," as well as Chart V, "Harwood Index of Inflating.") In our computations, we deduct the hoarded currency from the total of inflationary purchasing media, because one who hoards Federal Reserve notes is, in effect, retaining a time or saving deposit in that form in preference to opening an account with a local bank. Although the total amount hoarded has at times been large, especially in the late 1940's, adjustment of the computations described herein accordingly is relatively simple.

Questions that have been raised in correspondence with other economists have indicated that a brief supplementary discussion of investment-vs.-savings relationships may be desirable. One should differentiate clearly between the total of accumulated savings at any particular date and the *rate* of saving at that time; and a similar distinction must be made between accumulated investments at any date and the *rate* of investment at that time.

During an inflationary progression (assuming that much of the inflationary purchasing media is used for new investment, as it usually is), the *rate* of investment exceeds the *rate* of saving. Continuation of this procedure over a period of time causes the sum-total of investments gradually to become larger than the sum-total of savings (measured in dollars at the time the investments and savings, respectively, were made). At the peak of a boom, therefore, total investments exceed total savings by the accumulated amount of the investments made possible by the inflationary purchasing media. In mathematical terminology, the excess of investment over saving (accumulated totals, of course) is an integration of the difference between the *rate* of new investment and the *rate* of current savings during the inflationary period.

During the deflationary phase, part of the *current* savings fail to reach the markets for investments because these savings are being used to repay the bank loans that made possible the prior inflating. In other words, the excess purchasing media are being gradually withdrawn from circulation. Another way to look at it would be to say that the excess investments made during the boom are sold at sharply reduced prices to those who save during the depression phase. Consequently, their savings take off the market previously constructed capital goods, rather than result in the construction of new capital goods. With this viewpoint in mind, one might argue that, during the deflationary phase, investment is less than saving; but, to be precise, one should say that *new* investment, or the *rate* of investment, is less than the current *rate* of saving, and the obvious reason is that part or all of current savings are used to buy the boom-time new investments that had not been sold to savers, both corporate and individual (who are, of course, the final buyers of all new

capital goods).

As far as is known, there is no proof that total savings have ever exceeded total investments, except possibly during periods when the public was actually hoarding currency or keeping idle a larger than usual portion of demand deposits. Such an abuse of the money-credit mechanism is conceivable; but, until there

is proof that it occurs, attention might well be concentrated on the abuses that we know do occur. As is pointed out elsewhere, there is at least one other explanation of the lower velocity of purchasing media during the depths of a depression than the explanation, hoarding of bank deposits, which has often been taken for granted.

VI.

THE ACID TEST

PREDICTION is the acid test for any description of events and their relationships. Forecasting all types of economic phenomena with equal expectations of success is not possible because the conditions involved are not subject to laboratory control. However, if inflating is as important a factor in the business cycle as has been indicated, measurement of such inflating should make possible a high percentage of successful predictions, provided the forecasts are limited to that which may be expected from the relationships already discussed. Followers of scientific method presumably therefore would agree that predictions based on the data offered should be considered by anyone attempting to evaluate the theories or descriptions involved.

PREDICTIONS VS. EVENTS

Inasmuch as the basic ideas presented in this book were discussed by the author first in early 1928, there has been ample opportunity to subject the theory to the acid test of forecasting. Enough time has elapsed to make the tests complete in several instances. The results seem to confirm the underlying soundness of the basic ideas.

Beginning in September 1927, gold was exported on a fairly large scale for several months. This occasioned much comment by economists and financiers. There was disagreement as to the effects to be anticipated. Estimates of the amounts of gold that could be given up by this country without undue restriction of credit ranged from one or two hundred million dollars' to as high as one billion dollars' worth of the yellow metal. Although there was not then available the elaborate statistical analysis since prepared, such data as were available pointed to the fact that credit expansion had already proceeded about as far as was possible without resort to the use of more Federal Reserve credit. The concluding paragraphs of an article¹ written in early 1928 compared Federal Reserve credit to a shoe as follows:

"To return to the credit 'shoe', we are in this position: the foot has swelled; the Federal Reserve Board is tightening the lacing; and there is a fair probability that the shoe itself will shrink materially. Therefore, we should not be surprised if a pinching sensation develops. . . ." The timeliness of the foregoing prediction of an end of the easy-money period is shown by reference to any of several good indexes of bond prices. ("Standard Statistics," *The Annalist*, Dow Jones, etc.) It will be observed that March 1928 was the peak month.

By January 1929 the existence of marked inflating had become so obvious that an article² was prepared that discussed the general situation and, in addition, included calculations showing the maximum possibilities of further credit expansion at that time. One of the significant paragraphs follows:

"Banks of the country are already in a position which, before the days of the Federal Reserve System, would have choked off the era of prosperity. In other words, they are overloaned, and are able to continue

supporting outstanding credit only by borrowing from the Federal Reserve banks." This article did not predict an immediate termination of the boom, but it did show that an unsound situation then existed and that it would result in ultimate collapse.

In February 1929, the author also pointed out the grave dangers associated with the security speculation then in progress. A few brief extracts from the published article³ will show its tenor:

"It was pointed out that a check operates against commodity price inflation because other countries seek through exports to take advantage of high prices in any one country. In the case of securities, this check cannot act. In the absence of any outside check, the situation is similar to the famous tulip speculation which occurred in the Netherlands, or even to the ill-fated Florida land boom.

"Because of this fact, it is probable that forced liquidation of securities would develop very much as has the farm loan situation since 1920.

"In 1920, straight commercial loans were a far greater proportion, and the credit structure was correspondingly safer. . . . The creation of this enormous volume of purchasing power goes far to explain stock-market action." In short, the article maintained that "the current speculation in, and price inflation of, capital goods as represented by securities is far more dangerous than commodity speculation." The conclusions reached were based on portions of the business-cycle description already discussed at length. The correctness of those conclusions became apparent in the early 1930's.

In 1929 a few sane observers apparently realized that the mad speculation was bound to end in catastrophic plunge. For the most part, however, the prophets were telling of even better times to come. The few dissenters were simply drowned out by the happy gamblers' chorus set to the tune of clicking tickers. Finally, as though to make real and substantial conditions that had seemed something of a dream, someone announced the discovery of a "new era." Giving all the credit or blame for this discovery to the economists would not be fair because many of them never did admit that times had changed. But some left a written record of their findings, and there one finds the claim that the "new era" rested on a firm foundation because there was no inflating; and the presumed absence of inflating was predicated on the fact that commodity prices had remained at approximately the same level for six or seven years. However, the conjectures herein developed had provided an explanation for the apparent stability of commodity prices consistent with the existence of marked inflating. The following is quoted from an article⁴ written in March, 1929:

"It must be remembered that these prices are relative as well as absolute. That is to say, in considering them, their relation to world commodity prices and long-term

¹"The Probable Consequences to our Credit Structure of Continued Gold Exports," *The Annalist*, March 23, 1928.

²"Calculations on the Credit Expansion Limit to Present Prosperity," *The Annalist*, January 25, 1929.

³"Speculation in Securities vs. Commodity Speculation," *The Annalist*, February 15, 1929.

⁴"Current Inflation, Why Commodity Prices Remain Relatively Stable."

trend should not be overlooked.”

In other words, the apparently stable situation during much of the 1920's insofar as commodity prices were concerned concealed a rise in prices relative to the long-term trend. Therefore, the absolute level of commodity prices was not a satisfactory criterion of inflating. Incidentally, this article showed that the level of prices was maintained only because there was inflating, and that lower prices were to be anticipated. The letter from the editor to whom it was sent stated that the study was “too theoretical” for his use; consequently, the article is available only in the author's files. (The commodity price aspect of the problem is explained more fully in Section VII.)

One of the most interesting of the published articles⁵ appeared in August 1929. It included the second attempt to evaluate statistically the extent of inflating and was the first to present data showing the relationships between the investment-type assets and savings-type liabilities of the banking system. Although the statistics compiled were incomplete, the following definite conclusions were drawn:

“1. There has been a tremendous expansion of bank credit since 1920.

“2. Part of the expansion has been inflationary in nature, so that, while a reasonably sound position existed as late as 1925, the degree of inflating in 1929 would seem to be comparable with that of 1920.”

The timing of this article was exceptionally fortunate, in that the beginning of the end was but a little more than a month later. However, after granting luck its due, there still remains a balance on the right side of the ledger to be credited to the description of the business cycle herein presented. The concluding paragraph of the article follows.

“It seems to this writer that the concrete evidence herein presented offers a far more satisfying explanation of the prosperity of the past few years than the ‘new era’ brand of reasoning; and further, that the time may not be far distant when the country will realize, in the light of a ‘cold gray morning after,’ that it has just been on another credit-splurging spree.”

After the initial collapse in the security markets, the panic of 1929, there was an attempt to belittle the extent of the impending readjustments. In certain quarters there was still plenty of confidence, or at least an outward appearance of it. By various means, prosperity was to be brought back into the fold. Wages were to be maintained. (Henry Ford even announced an immediate raise for those in his employ.) New construction was to be pushed by public and private agencies. Everyone was to continue to spend as he had before. In that atmosphere of hope and determination, when rose-tinted glasses were almost forced upon one, and when “. . . he and his son, John D. Rockefeller, Jr., were accumulating substantial amounts of common stocks,”⁶ viewing conditions realistically was difficult. However, once again the basic description of the cycle was applied, this time in an article⁷ published late in November 1929. A few important truths were mentioned:

“. . . and the truth of the matter is that the banks, taken as a whole, are greatly overburdened with slow-moving assets. It was treating credit as capital which

made possible the speculative orgy of recent years. When therefore, Mr. Hoover, or anyone else, speaks of the Federal Reserve System as making available ‘ample capital,’ he is suggesting a continuation or renewal of the unfortunate policy which has been instrumental in bringing about the existing situation.

“. . . In other words, credit, instead of having been confined to its legitimate use (the distributive function) has been authorized on the basis of assets which were not habitually liquidated within a brief marketing period. Instead of being retired with the passage of goods into consumers' hands, this credit has remained in circulation, an excess over the genuine needs for distributive purposes.”

In short, the article from which the above was taken stated in no uncertain terms that the situation was not fundamentally sound, that the banking system was in a seriously non-liquid position, and that there was no royal road via high wages, new construction, pep, and ballyhoo that would permit a quick return to prosperity. In fact, the article as originally written definitely predicted insolvencies among the banks “in wholesale lots.” Because of the fears of the public at that time, this was a little too blunt for publication. The editor of *The Annalist* felt it wiser to delete the sentence. Some 9,000 of the Nation's 25,000 commercial banks failed in the next few years.

Mention has already been made of the new construction proposals that were to bring back prosperity. Apparently, this particular panacea was especially favored by Mr. Hoover. In any event, Governor Brewster of Maine, in speaking before a conference of governors on November 21, 1928, said, “It is the considered recommendation of the one who has received the overwhelming mandate of the American people to guide and guard their progress in the next four years that a construction reserve may prudently be accumulated in time of plenty against the lean year that is to come. . . .” When the lean year came, the Administration in Washington called a conference at which new construction pledges were made. Railroads, utilities, States and municipalities, and, of course, the Federal Government, all agreed to increase construction in order to bring back the days of the full dinner pail.

For a time the vast undertakings initiated in accordance with the pledges made in Washington seemed to exert a steadying influence. During the early spring of 1930 many observers apparently believed that the depression was over. But the Index of Inflating told a different story that was recorded in another article,⁸ which appeared in May 1930, just when it seemed most certain to many that the corner had been turned. A brief quotation from that article will suggest its general character:

“The President, as might have been expected, recently spoke hopefully before the Chamber of Commerce of the United States, asserting in no uncertain terms that ‘our joint undertaking has succeeded to a remarkable degree,’ and that ‘we have attained a stage of recovery within this short period greater than that attained during a whole year or more following previous equally great storms.’ Unfortunately, these high-sounding phrases bear neither statistical nor logical analysis. . . . Furthermore, the end is not near. . . . One the whole, it seems neither unfair nor premature to charge the forced construction scheme with definite failure to improve the situation, and with actually

⁸“Criticism of Stimulated Construction as a Cure for Business Depression,” *The Annalist*, May 30, 1930.

⁵“Deterioration of the American Bank Portfolio,” *The Annalist*, August 2, 1929.

⁶Headlines in the *New York Times*, October 31, 1929.

⁷“The Aftermath of Getting Somethinf for Nothing,” *The Annalist*, November 29, 1929.

prolonging or tending to prolong the current depression.”

Based on preliminary estimates, an article⁹ on December 21, 1931, stated that, except for hoardings, the balance between savings and investments was substantially restored. It also indicated the possibility of danger ahead as follows:

“When savings are accumulated in the form of currency hoardings, the money-credit mechanism fails to function properly. There is a definite contraction of the purchasing power in circulation which chokes off the distribution of goods, which could conceivably end in a temporary disruption of the money-credit mechanism.”

On February 15, 1932, another article¹⁰ emphasized the severe strain imposed on the banking system by hoardings, and recommended the remedial measures subsequently taken by the Federal Government and the Federal Reserve Board.

In April, when the Federal Reserve Board began its policy of buying securities on a large scale, there was much disagreement as to the probable results. Another article¹¹ at that time defended the Federal Reserve policy and took a definitely optimistic attitude toward the security and commodity markets. By projecting the Federal Reserve buying rate into the future, it predicted that the turn for the better would be made possible “. . . by the absence of further liquidation of bank assets” probably about the end of May. (Bond prices reached bottom May 31, 1932.)

The next two years saw much change and confusion in the American economic scene. Among the kaleidoscopic shifts that occurred were the election in the fall of 1932, the increased efforts of the inflationists in Congress during early 1933, the scramble for gold in February, and the closing of the banks in March of 1933. These events were followed quickly by abandonment of the gold standard, the introduction of the NRA, the attempt to force down the dollar in terms of foreign exchange, and finally, early in 1934, the devaluation of the dollar.

A few months later, it became possible to judge the direction in which we were proceeding, and in an article written at that time,¹² after pointing out that “the inflation now in progress is similar to that carried on during the World War,” I concluded: “It is also plain that there are ample credit facilities for the greatest boom on record. With the natural recuperative forces which are always present, plus the continuing pressure from devaluation, and a probable inflating of awe-inspiring proportions, it seems safe to say that the entire process is barely begun. Now is an appropriate time to visualize the possibilities involved and to fix responsibility for each rash experiment as it is undertaken.”

Early in 1935, the situation was again discussed¹³ in the following language:

“It cannot be too strongly emphasized that the funding of Treasury deficits by the banking system, to the extent that new credits are originated for that purpose, is inflating. This is precisely the process that was followed in France during the chaotic years of Alice-in-Wonderland finance, from 1919 to 1926.

“Inflating has already begun, and it is daily being increased by the forcing of demand deposits into business channels through the mechanism of government spending.

⁹“Is Deflation Nearly Completed,” *Barron's* December 21, 1931.

¹⁰“Effects of Currency Hoarding,” *Barron's* February 15, 1932.

¹¹“Bold Action Justified,” *Barron's*, April 29, 1932.

¹²“Inflation Barely Begun; Rising Demand Deposits and Other Potentialities,” *The Annalist*, September 21, 1934.

¹³*Research Reports*, published weekly by American Institute for Economic Research.

The contemplated deficit for the next fiscal year of approximately \$4,000,000,000 will no doubt involve a continuation of the same process.”

Three months later, the inflationary implications of the first spending program were discussed briefly.¹⁴ The conclusions are especially interesting in the light of subsequent events.

“Evidently, the \$4,800,000,000 relief bill is intended to make it possible for the Administration to follow the advice of Dr. John Maynard Keynes. It may be recalled that he advised spending some \$400,000,000 monthly for a time as a means of adequately priming the business pump. When the process of spending this enormous sum has been accomplished, a degree of inflation at least comparable to that existing in 1929 will have been created. It is possible that the general public will have become sufficiently optimistic by that time to speculate in commodities, stocks, or real estate, thereby increasing the degree of inflation. Of course, the outcome will be another severe depression, and it is to be hoped that bootstrap-lifting devices will by then have fallen into disrepute.”

Readers may be recalled that immediately after the Supreme Court's NRA decision in May 1935, there were many predictions that prices would fall to much lower levels. Even President Roosevelt himself, when discussing the NRA decision, asserted that “If we abandon crop control, wheat would immediately drop to 36 cents a bushel and cotton to 5 cents per pound,” thereby implying that only the artificial controls such as the NRA prevented a much lower level of prices. However, in the light of the basic theory discussed here, such conclusions seemed obviously unsound; and, after discussing the situation, we asserted, “The long-term trend of commodity prices is upward.”¹⁵ Although prices did fall somewhat after the spring of 1937, they did not fall to the levels of June 1935, even during the worst of the 1937-1938 depression.

By December 1935, it was apparent that the trend of business activity was upward, and the situation was again discussed at that time.¹⁶

“The degree of recovery which has so far been achieved by business has been attributed by the President and other Administration spokesmen to the efforts made by the Federal Government to set the wheels going once more. Although Government spending for pump-priming purposes has been declared discredited by many of the Nation's leading economists, the Administration still maintains that without this spending the recovery which has occurred up to the present time would not have been possible.

“Even if the validity of this contention is granted, justification of government expenditures during a depression in order to re-establish another upward business cycle is not necessarily established. The only satisfactory test of the validity of this theory is whether or not the recovery which comes is sound and lasting. If recovery develops into a boom of ruinous proportions, or if it creates maladjustments which subsequently force a severe setback, the method will be demonstrated a failure, even though it be granted that it was responsible for the relatively short-lived recovery movement.”

The predictions and discussion that follow are a

¹⁴*Monthly Research Reports*, Bulletin, March 1935.

¹⁵*Research Reports*, June 3, 1935.

¹⁶*Research Reports*, December 23, 1935.

running commentary on the situation as it developed during late 1936 and early 1937. They were based on the understanding of the business cycle set forth in this bulletin.

"The sharp dip [in the Index of Inflating] since June 1936, is primarily the result of two factors. First is the liquidation of investments which has been under way by the banking system during the past five months. Under some circumstances, this might be an especially significant development. Such was the case in late 1928 and early 1929 when the banks were disposing of their investments at approximately the same rate as they have been selling them during the past few months.

"Because the inflating which accounted for the New Era was of the private credit variety, the initiation of deflating by the banking system meant that the inflationary progression itself must shortly come to an end. Today, however, the situation is quite different. There is now under way in this country a progressive inflating via budget deficits which have been and still are being monetized by the banking system. During such an inflationary progression, the liquidation of bank investments is hardly likely to do more than cause a temporary reversal of the inflationary trend." *Monthly Research Reports*, November 1936.

"The theory that a maldistribution of income is responsible for the business cycle easily finds adherents among those who are laboring for the cause of social justice. It carries an appeal to their deepest convictions that enables them to hurdle the barriers of logic.

"It is not to be supposed that seekers after Utopia will be swayed by reason in this instance. Therefore it is probable that the New Deal will continue its efforts to distribute the national income more or less differently. Needless to say, the results of such action will not be to eliminate the business cycle. On the contrary, and judging by the course of recent events, New Deal policies seem far more likely to increase the violence of cyclical changes." *Research Reports*, December 7, 1936, apropos of an article, "The Next Four Years in Agriculture," by Henry A. Wallace, *New Republic*, December 2, 1936.

"The most disturbing feature of the President's message is his failure to provide for more prompt retirement of the public debt. During four years of depression and delayed recovery, we have spent approximately eight billion dollars in the hope of aiding the recovery process. If all goes well, we shall begin in 1939 to reduce the total debt at the rate of approximately four hundred million annually. At that rate, 20 consecutive years of extreme prosperity would be required to bring the Federal debt back to the point which it had reached in 1932. Does anyone imagine that we may look forward to twenty years of uninterrupted prosperity? . . .

"If, as seems much more likely to be the case, we find ourselves headed into another depression before any substantial reduction has been made in the public debt, what shall we do then? Shall we incur even larger deficits and build up an even larger total of public debt? The process cannot be long continued before it will be cumulative, and this country will be well launched on the toboggan slide which ends in complete debt repudiation. That is the road we have begun to travel." *Research Reports*, January 18, 1937.

"It will be noted that there has been actual deflating in the amount of nearly \$400,000,000 during the past

four weeks. If this movement continues, it will be necessary to revise downward present expectations of inflation's effects. . . ." *Monthly Research Reports*, March 1937.

"It is our belief that further large sales of Government bonds by the reporting member banks would indicate that a substantial retreat back along the road of inflation that we have traveled is in order, and that a minor depression at least comparable to the cyclical downturn in 1923 and 1924 is immediately ahead." *Research Reports*, May 3, 1937.

"Although the trend of the Harwood Index of Inflating, considered alone, has seemed to indicate the probability of a severe decline in industrial production and commodity prices, several factors lead us to believe that such declines, if any, will not be extensive. . . .

"Our belief has been that, before such efforts would be felt, the Government would reverse its deflationary policy and, either in order to monetize continuing budgetary deficits or in an effort to 'stabilize' business and prices on a high level, would attempt to reverse the deflationary effects resulting from the raising of member bank reserve requirements." *Research Reports*, September 20, 1937.

As everyone now knows, the Administration chose not to act so promptly as seemed likely to be the case before the event. For reasons that have never been explained, little or nothing was done until the spring of 1938, when President Roosevelt did recommend to Congress another spending and lending program. Shortly thereafter, the following predictions were made:

"A renewal of government spending under these circumstances will increase consumer purchases, and recovery will probably be apparent by fall. . . . It is highly probable that the next movement of business activity and prices will be upward, and that it will not be long delayed." *Research Reports*, June 6, 1938.

"The Harwood Index of Inflating advanced 2.9 points in June. . . . The Index of Inflating is proving to be a significant barometer. . . . Its consistent advance during the past six months is an increasingly important indication of an upturn in industrial production and commodity prices." *Research Reports*, June, 1938.

As is shown by the chart on industrial production, the recovery of such production began in the summer of 1938. Commodity prices stopped declining at nearly the same time, but the marked upward movement of prices occurred several months later.

"None of the price controls proposed and given serious consideration by the Government have really attacked the core of the problem, that is, the prevention of inflating itself.

"The action of the Harwood Index of Inflating clearly indicates that the explosive stage of an inflationary progression can only be postponed, not avoided. Therefore, it is clear that the individual must prepare as best he can to protect himself from an ultimate rise in the cost of living that will be considerably more extensive than that which has thus far occurred in the present war." *Research Reports*, August 31, 1942.

During the subsequent war years and for several months after V-J Day, the index of inflating continued upward. However, in the summer of 1946, deflating began. An estimate of the situation just prior to the stock market panic of September 1946, was as follows:

"Our guess is that the chances of a severe crisis within several weeks or a few months are already three or four in ten. Drastic declines in the securities markets

followed by declining prices for commodities and a severe (but perhaps brief) business depression would all be logical expectations. Certainly, with every month that includes a continuation of recent trends, there will be an increasing probability of such adverse developments." *Research Reports*, September 2, 1946.

Subsequently (March-April 1947), the index of inflating remained almost unchanged for several weeks. We commented on this situation as follows:

"In the absence of further deflating, that is, if the index of inflating remains at or near recent levels, we do not see how there can be any serious downward pressure on prices in general. Undoubtedly, the prices of many items are 'out of line'; some prices are already on the way down, in fact; but it is difficult to imagine how there can be a substantial and general decline in the price level, for more than a brief interval of a few months, if the index of inflating remains near its present level.

"The Administration has recently done a lot of talking about prices, and we should be the last to deny the desirability of lower prices in general. However, prices are not going to come down very far and stay down, unless much more of the inflationary purchasing media already in circulation is permanently withdrawn." *Research Reports*, May 5, 1947.

"Deflating, to the extent that now seems probable in the next 6 months, may well be sufficient to terminate the business boom." *Research Reports*, September 27, 1948.

"If the degree of inflating continues to increase as it has in recent weeks, a revival and resumption of the boom will be probable." *Research Reports*, July 25, 1949.

"The decreases thus far in common-stock prices, the inverted series of liabilities of business failures, and those of other leading indicators are similar to those that occurred prior to the minor recession from November 1948 through October 1949. Although we believe that the general business situation is sufficiently vulnerable so that the danger of a severe depression should not be disregarded, we do not have, as yet, any scientific basis for predicting either the severity or the duration of the recession that now seems probable." (*Research Reports*, September 21, 1953, page 150.)

"The special circumstances already mentioned may account for the rise in industrial stock prices, and other special circumstances may account for the recent upward trend of the index representing prices of 22 basic commodities. However, three additional leading indicators whose statuses are indeterminate likewise give us no reason to expect a severe depression. When these facts are considered in conjunction with the stiffening of steel-scrap prices during recent weeks and the high probability of some additional inflating during the remainder of 1954, the probability of drastic deflating with an accompanying severe depression in the near future seems small." *Research Reports*, April 26, 1954, page 66.)

"We believe that some increase in general business activity is more probable than a decrease from present levels, partly because we expect the Nation's long-term economic growth to be a mildly sustaining influence and, in the absence of deflating, we can visualize no strong contracting forces." (*Research Reports*, June 7, 1954, page 94.)

"Even the degree of inflating that exists today apparently need not be an insuperable barrier to sound economic growth. After passage of the Gold Resumption Act of 1875 (with its effective date January 1, 1879) the

Nation enjoyed for nearly 20 years the most rapid and sustained industrial growth in its history, in spite of the difficulty of 'digesting' the nearly \$4,000,000,000 of inflationary 'greenbacks' through the process of gradual deflating. The accompanying almost continual decline in prices proved to be no barrier to industrial growth, although some economists argue today that a rising price level is needed to stimulate such industrial progress.

"For these reasons, we do not doubt that further rapid growth of the economy is possible, perhaps at a rate exceeding that at any time during the present century. Of course, even the expectation of such growth may stimulate another speculative boom in real estate or securities; and if we do not soon apply the lessons of sound commercial banking, the aftermath of such a boom could be as disastrous as that after 1929. But until such a speculative boom develops there is at least a chance of rapid and orderly economic growth as gratifying as that during any stage in the Nation's history. We can only report that, in our opinion, 'it could be.'" (*Research Reports*, July 5, 1954, page 110.)

"We find no important developments so markedly different from those of 1927 that resumption of the boom seems highly improbable. On the contrary, several of the factors that have seemed to be most influential in the past seem once again to be affecting the course of business as they did in 1927.

"That the Nation can 'do it again,' in other words, that another great speculative boom similar to that of 1928-29 can be created, seems not by any means impossible. However, we do not believe that it can be done without the development of speculative activity on a large scale in one or more sectors of the economy.

"Ordinarily, we should not expect a repetition within three decades of a speculative boom such as that of 1928-29. One must go back more than 200 years to the Mississippi and South Sea Bubble days to find a comparable frenzy of speculation in common stocks. Therefore, although the Federal Reserve authorities have done much to encourage a repetition of the 1928-1929 fiasco, they may react more quickly than they did in those years if speculation does develop on a large scale. Also to be considered is the fact that many individuals now living have bitter memories of their experiences a quarter century ago. The combination of restraint induced by individual fears and earlier action by the Federal Reserve Board may inhibit continuation of developments paralleling those of the Great Boom. If so, the recovery phase of the present business cycle may extend over a longer period than the brief but marked upsurge of business activity through 1928 to mid-1929." (*Research Reports*, August 2, 1954, page 126.)

"To summarize: first, an increase in business activity of roughly 20 percent is believed to be within the range of possibilities that should be considered; second, a rise in stock prices reflected in a figure even as high as 525 in the industrial average might occur *without paralleling the final upward surge that was accompanied by such rampant speculation in 1929*. However, unless earnings improve substantially during the business boom (as they might not in the absence of marked further inflationary expansion of private or public debt), a figure as low as 430 for the industrial average might prove to be an upper limit.

"As far as we can discover, there is no reason why commodity prices generally should rise greatly during a resumption of the boom. Such prices remained almost unchanged throughout 1928 and 1929. Only if additional

inflating resulting from monetization of public or private debt reached large proportions should we expect most commodity prices to move upward sharply." (*Research Reports*, September 20, 1954, page 158.)

"Already the United States is well started along the primrose path of monetary depreciation down which France has proceeded to the ruin of many citizens and virtual impotence as a nation. We suspect that a resumption of the boom fostered by more inflating would be followed by an aftermath that would constitute a second long step on the same road and that in a few years another devaluation of the dollar would be one probable outcome. In the meantime, one can at least hope that wisdom, restraint, and firmness will be reflected in a wise choice of policies by the Government and the money-credit authorities. The continuing series of recent and near future policy decisions probably will determine whether the Nation is to enjoy a prolonged period of healthy growth or a shorter prelude to more difficult conditions." (*Research Reports*, October 4, 1954, page 166.)

"Because we believe that others may have overlooked an important factor, we should choose resumption of the boom as the most probable development during 1955. The overlooked factor, we believe, is the huge volume of idle purchasing media (hoarded currency and demand deposits), a substantial part of which may come back into circulation during 1955." (*Research Reports*, January 3, 1955, page 1.)

"Present indications are that inflating will be increased during 1955 by means of expanding real-estate and installment loans. If such proves to be the case, that stimulant alone could account for a resumption of the boom.

"We conclude that resumption of the boom with industrial production reaching new records is the most probable of the several possible developments during 1955." (*Research Reports*, January 3, 1955, page 2.)

"Continuation of the restrictive money-credit policies has, as a result of termination of the boom, been characterized as a reversal of the policy of leaning against the wind. We believe that the experience from 1953 to date proves this charge to be unfounded. A problem of timing relaxation of credit is involved, but all indications are that the time has not come to ease credit. To repeat the major error of 1953-54 would invite a resumption of inflating. In view of the advanced stage of inflating in the country today, a reversal of the Board's present money-credit policy prior to a substantial deflating and accompanying correction of many economic distortions *might* alleviate the situation temporarily (although that outcome would not be assured) and must inevitably set the stage for even more painful readjustment later." (*Research Reports*, November 11, 1957, page 178.)

"The Federal Reserve Board's policy of underwriting the large prospective Treasury deficits in the second half of 1958 seems to assure the addition of several billions of dollars of inflationary purchasing media to the total of purchasing media before the year end. Because Treasury deficits rather than surpluses are indicated for some time, it seems probable that this additional inflationary purchasing media will be more or less permanently added to the money-credit supply with further depreciation of the dollar

as on result." (*Research Reports*, August 4, 1958, page 122.)

"For those who 'sow the winds' of inflation and related economic evils, there is no escape. That the United States will continue to 'reap the whirlwind' of economic and social tribulations is as highly probable as it is improbable that those in the seats of economic and political power will see the error of their ways and reverse the course of the American ship of state." (*Research Reports*, January 22, 1968, page 15.)

Beyond question, the nature of the inflationary boom that ended in 1920 was plainly indicated by the Harwood Index of Inflating. It is true that the precise turning-point could not have been forecast from the data shown. However, in conjunction with the reserve situation of the twelve Federal Reserve Banks, the approximate end of that speculative spree could have been predicted.

The decline registered by the index of inflating from late 1919 to 1921 showed that the long-run balance between total investments and total savings was being restored. In the absence of hoarding or some unpredictable catastrophe, recovery presumably would begin as soon as the deflationary process was completed.

LIMITATIONS OF INDEX OF INFLATING

Before concluding this Section, a word of caution regarding the use of the index of inflating for forecasting purposes seems advisable. Unless its limitations are realized, some readers may assume that it provides a dependable mechanical guide to stock market action, and therefore offers a shortcut to great wealth. No doubt, the index has been and will continue to be of value to the long-term investor or speculator who buys his securities outright; but it should be clearly understood that the index of inflating is not recommended as a guide for those who indulge in margin speculation or trading operations.

This raises the question, What, precisely, can the index of inflating be expected to indicate? Experience with it to date demonstrates that, when the index shows practically no inflating after a substantial downward movement, a cyclical upturn may be expected within a few months thereafter. When the index of inflating is moving upward, it indicates a progressive distortion of the economic system. However, the index does not facilitate prediction of the exact peak of an upward movement. Perhaps, after our experience with it covers a longer period, we shall find that when some particular degree of inflating is reached the maladjustments are sufficiently serious to force a reversal of trend, in most instances. In the meantime, the most that we are justified in saying is that the degree of inflating reached is a good indication of the seriousness of the underlying maladjustments that will later have to be corrected. Therefore, although the index of inflating may not provide accurate timing at the turn from prosperity to depression, it does give a valuable clue to the probable seriousness of the corrective liquidation process that must be undergone. Further refinement of the index, which could easily be accomplished if the necessary bank data were made available, probably would make it a more valuable guide at all stages of the business cycle.

VII.

EXPLANATION OF VARIOUS FAMILIAR PROBLEMS

IN preceding sections of this report significant aspects of business cycles have been described. The development of this description proceeded from observation of some facts believed to be pertinent to conjectures that pointed toward other facts to be investigated, which in turn supported the preceding conjectures and invited new conjectures pointing to additional facts to be observed and measured, thereby bringing the overall description (sometimes called a theory) to a useful stage, a stage that facilitated prediction of business-cycle changes. The comprehensive description may be extended to the problems discussed below.

UNEMPLOYMENT

In general, there are three classifications into which a major portion of the unemployed may be grouped, as follows:

1. The unemployable; that is, those who are unqualified because of health, habits, age, or other disqualifying factors. Under certain conditions, as in time of boom prosperity, some place in the productive scheme may be found for the least inefficient of this group, but ordinarily and in the long run they are unable to find a niche in the economic edifice because they are incompetent for one reason or another.

2. Those unemployed for reasons inherent in the nature of their work. This class includes those seasonally unemployed in the building trades, for example, as well as the unemployed among dock laborers, who expect only intermittent employment at best.

3. Those unemployed by reason of new inventions and the resulting changes in industry.

The foregoing classifications, it will be observed, are almost certain to have at least a few representatives among the unemployed at all times and regardless of the phase of the business cycle. Of course, the business cycle in itself is accountable for some of the unemployment during the depression phase.

For those in Class 1, the business cycle has a marked influence. During boom periods, businesses are forced to expand operations in order to meet the increased demand. This expansion almost invariably is accomplished at the expense of efficiency, at least in part. This in turn means that, during such periods, a portion of these usually unemployable are drawn into industry. The fact that they are not earning their pay is hidden by the windfall profits accruing to businesses. Of course, when hard times come and every business is carefully weighing the worth of each employee, the so-called unemployables are the first to be cast aside. Therefore, the business cycle has the harmful effect of drawing into industry during boom periods some of the individuals actually not able to aid the production processes.

For those in Class 2, the influence of the business cycle does not appear to be so marked. It has no effect on the weather and does not alter the seasonal factor.

For those in Class 3 (technological unemployment) the business cycle probably has a substantial effect. During periods of extreme prosperity, most businesses receive abnormal profits. These windfall profits postpone the necessity of reducing production costs. There is not the

same urge to take advantage of more efficient production methods that there is in times when profits are more difficult to obtain. Furthermore, although improvements may be introduced in some businesses in order to meet an increasing demand, the mere existence of excess demand makes possible the use of submarginal units that are actually obsolete. In other words, the normal death-rate of businesses and of equipment units is substantially lessened during inflationary periods of prosperity. Therefore, when deflating occurs, most of the technological readjustments are crowded into a short space of time. Technological unemployment consequently is great during the deflationary periods.

In addition to unemployment of the three classes mentioned above, there is the purely cyclical unemployment. During the deflating phase of the business cycle, innumerable businesses close their plants, at least partially, in preference to making the necessary price readjustments and taking the losses that they will ultimately incur. By so doing, each hopes to avoid the losses that are inevitable for business as a whole. Of course, the net effect of these efforts to sidestep the depression is to make it somewhat worse than it otherwise would be. As a matter of fact, many businesses might be no worse off if they continued production at their most efficient rate and took what they could get for their product. However, labor contracts are so inflexible (not to mention other fixed charges), and accounting methods are still so hopelessly inadequate for most businesses, that it will probably be a long time before action of this kind can be expected. In the meantime, cyclical depressions probably will be accompanied by unemployment on an extensive scale, with its attendant human suffering and irretrievable losses.

OVERPRODUCTION, UNDERCONSUMPTION, OR WHAT?

Among the innumerable explanations of the business cycle are those twin "bogey-men," overproduction and underconsumption. Some observers point at manufacturers and other producers, with the accusation that more things are made than people want. On the other hand, there are those who point at the money-credit system and denounce it for failure to provide enough money so that people can buy and consume what is currently produced.

Both of these notions are supported, apparently, by the fact that so much productive capacity lies idle during times of depression. Also, during the 1932 depression, certain of the basic commodities had accumulated and some of the agricultural products seemed to be in excess of human needs. Notable among the latter were coffee, sugar, wheat, cotton, and rubber.

That a social group might inadvertently devote an excess of its productive powers to the fabrication of *some* of the many articles manufactured, or might grow more wheat, say, than was currently needed for human food is readily imaginable. It is quite another thing to assert that the existing society has done that. Even with reference to

the agricultural surplus, there might be no surplus if the unemployed of the world were at work and able to buy more, or better, food. And finally, although nature may have aided man in producing an agricultural surplus genuinely in excess of needs, that the social group cannot, as yet, produce more of things in general than its members desire surely is obvious.

During the continued inflating that makes possible the business boom, there is an origination of excess purchasing media by the banks. This swelling flood of purchasing media, in one form or another, flows out into the channels of trade with results somewhat as follows: various producers of the articles earliest affected find themselves making unusually large profits; in order to take advantage of the increasing demand, new productive facilities are planned and begun; the flood of purchasing media is turned first into one channel, then into another, until nearly all lines of business are affected; prices in general rise, or at least are not reduced as fast as savings in costs of production would otherwise warrant; shortly, the entire business world becomes adjusted to a higher level of prices and costs (or a higher level than would exist if there were no inflating.)

Now, in order to maintain and continue the inflationary progression just described, larger and larger volumes of bank credit are needed. Finally, the banks reach the limits of their legal reserves, as in 1920; or perhaps the main speculative structure topples like an inverted pyramid, carrying the margin speculators to their ruin; or possibly the failure of the inflationary progression to continue at an accelerated rate is accompanied by a decrease in business profits because of rising costs. In any event, a period of liquidation begins that reverses the inflationary process. This had best be described in detail.

In the simple illustration of inflating given in Section III, the capitalist involved was assumed to have borrowed bank credit based on, or secured by, some of the common stock representing ownership in the various businesses. *In so far as this loan exceeded the savings available to bank concerned that it had not yet invested, there was inflating.* When the boom collapses, the banks are forced to call such loans, in part at least, or to sell other assets such as their investments in bonds. Whichever procedure is followed will have the effect of withdrawing purchasing media from circulation, and the purchasing media, in the form of demand deposits for the most part, simply pass out of existence. Hand-to-hand currency likewise decreases in volume (unless there is hoarding on a large scale).

But production in general has been increased under the stimulus of progressive inflating. There is, necessarily, some time lag between the beginning of production and final consumption of finished articles. Furthermore, time is required for producers in general to realize that the end of a boom has come. Consequently, innumerable articles are in and on the way to market, priced at prosperity levels, long after the turn of the tide has occurred. The absence of continued inflating plus the withdrawals of purchasing media by individuals and others in order to pay bank loans decrease the effective demand for goods. The purchasing media returned to the banks to settle indebtedness are, of course, retired from circulation.

Under the circumstances as outlined above, no one should be surprised to learn that goods do not meet purchasers in the market place; that factories apparently have produced more than is desired; that consumers appear not to have the funds to buy what they have collectively produced. Naturally, the situation is remedied

only after a long and painful series of price and wage reductions.

CREDIT EXTENSIONS TO THE CONSUMER

Installment sales have introduced a problem in recent decades because of the great increase in such transactions. The question is: What effects, if any, do installment sales have on the extent of inflating and consequently on the maladjustments of the business cycle?

Although the consumer borrows purchasing media from a finance company, the finance company usually obtains its funds from the banks. A partial exception to this statement is found in those instances where the finance company has issued bonds or has otherwise obtained a large capital for its own use directly from investors. In general, however, the finance companies borrow from banks by the process of discounting their own notes secured by negotiable paper evidencing customers' indebtedness.

The purchasing media thus obtained from the banks may either be *originated* by the banks, in whole or in part, or they may be savings already deposited with the banks and not otherwise invested. The important point is that the credit to a finance company's account as a result of discounting its note may be new purchasing media similar to the credit based on goods produced, as is illustrated in the simplified example already discussed at some length.

At first thought, readers may suppose that an installment debt is of the automatically self-liquidating variety because it is cancelled by regular payments during a definite period. But the criterion of the *automatically self-liquidating* asset, as distinguished from that of the investment type, is that the actual goods or other tangible articles must appear on the market *within the period of the loan* and by their sale provide the means of repayment.¹ However, an automobile, for example, sold on the time-payment plan does *not again* appear on the market during the period of the installment contract. The article is *already* in the hands of the ultimate consumer, and in the usual situation the payments are made by deductions from his current income. Under these conditions, the finance companies' notes secured by installment paper must be regarded as assets of the investment type.

The situation becomes more clear by reference to the simple illustration already presented in Section III. If the wage-earners in that situation were lent \$100.00 in purchasing media by a financing company, which had obtained newly created bank credit, there would be an extra \$100.00 on the demand side of the market, with resulting inflationary effects. On the other hand, if the wage-earners were lent \$100.00 of savings deposited by other individuals (assuming all the "remainder" to have been so deposited), there would be no lack of balance

¹ A liquid asset is one that *can* be readily "liquidated," that is, sold. A self-liquidating asset (according to popular usage during recent years) is one that pays a return sufficient to provide ordinary interest on the investment plus enough more to equal the original cost of the asset after a period of years. An automatically self-liquidating asset (as I have used the phrase) is one that is in the usual process of exchange prior to reaching the ultimate consumer. Large business inventories held for investment or speculative purposes are not in the normal process of exchange; they are abnormal accumulations that are not essential to the exchange process. As such, bank loans based on them are investment-type assets of the banking system. An automatically self-liquidating asset is offered for sale at market prices within the period of the loan based on it.

between purchasing media and the value of goods in the market.

The effects of a single inflationary loan would not be very great and would be cancelled when the loan was repaid. However, in prosperous times there is a tendency for such borrowings to increase at such a rate that the total is constantly growing in spite of repayments. *In so far as these are inflationary in nature*, there is an artificial stimulation of the industries directly involved that inevitably has widespread ramifications. For example, such a development leads to overoptimistic estimates of future growth and invites wasteful and unwise expansion, as the automobile companies perhaps realized in 1929 to 1932, and may again have occasion to realize in future years.

PRICES DURING INFLATING

In the decade of the 1920's the "new era" economists repeatedly emphasized the basic soundness of the economic situation. Business was fundamentally sound, according to their notions, even after the stock exchange panic of 1929. In large part, their contention that the prosperity then enjoyed was of the permanent variety was based on the grounds that commodity prices revealed no signs of inflating. Many held that, because commodity prices in 1929 averaged below the levels for such years as 1923 to 1926, there was obviously no inflating.

The course of subsequent events proved, beyond any shadow of a doubt, that the situation in 1929 was decidedly unsound. Furthermore, the criterion of inflating herein discussed proves that the unsoundness was made possible by marked inflating. Therefore, it seems safe to assert without qualification that the level of commodity prices is not a reliable indication of the presence or absence of inflating.

But it is one thing to decide that commodity prices fail to indicate the extent of inflating and another thing to demonstrate how that situation can exist. That demonstration will now be attempted. Two questions will make clear the problem to be discussed.

1. Why did not the use of inflationary purchasing media in business channels increase prices during the decade of the twenties?

2. Why was it *apparently* necessary for inflationary credit extensions to be made in order for consumers to have enough buying power to buy current output during the 1920's?

In order to find the answers to these questions, consider the simple example of an automobile manufacturer at two successive periods. The first period may have been any week in the spring of 1920, and it will be assumed that the manufacturer produced 100 cars during the week in question. They were loaded on freight cars from day to day, and on Friday afternoon the manufacturer obtained a loan from his banker equal, in dollar amount, to 90 percent of the wholesale price of the cars. (He may have drawn drafts and used the bills of lading in connection therewith, or the entire matter may have been handled through a finance corporation, which in turn borrowed at the bank; these details do not matter.)

With the proceeds of this loan, the manufacturer paid the weekly wage bill. He also paid for the raw materials used. Salaries, interest on bonded debt, taxes, etc. absorbed more of the funds. When cash receipts from sales came in and profits were known, dividends were declared or the funds were used in some other way. This situation can be set forth in a table as shown below.

MANUFACTURER'S COSTS AND INCOME DISTRIBUTION (Week of March 10, 1920)

Cars Produced 100	Value (Wholesale) \$50,000	Materials \$10,000	Wages \$20,000	Salaries \$5,000	Charges (Misc.) \$10,000	Net \$5,000
As a percent of wholesale		20%	40%	10%	20%	10%

Note: Actual new credit originated=90% of \$50,000, or \$45,000.

These various amounts appeared in the market as demand for goods shortly after they were paid by the manufacturer. Most of that spent for materials and wages was demanding goods within a few days. That held for salaries was not available to buy goods until the end of the month. Interest, taxes, and similar payments reached the hands of consumers perhaps quarterly. Dividends, or other distributions of profits, were probably paid quarterly.

Of course, the production of cars for this particular week was offered for sale on the market during the next several weeks. Unless there was an accumulation of inventories, or the reverse, cars sold during the succeeding week equaled cars produced during the given initial period. New credit originated by the banking system was the purchasing medium except for that portion of sales which were a direct exchange for the money commodity or its representative paper (a portion of Federal Reserve notes). The banking system was required to originate new circulating purchasing media in the form of demand deposits only for that portion of the goods produced in excess of that which could be exchanged directly for the money commodity.

Although the last car might have been disposed of either before or after the last of the corresponding purchasing media had also reached the market, in the given example, on the average and with all types of goods produced taken into consideration, purchasing media reach the markets more or less in parallel with the goods concerned, *except* when marked changes are occurring, as will be indicated later. Inasmuch as the economic machine functions fairly well in the absence of disturbing influences, we assume that there is sufficient elasticity so that the numerous individual shifts in habits, etc. are either counterbalanced or absorbed without adverse effects. For example, the fact that Jones fails to spend his weekly wage because he is sick in the hospital as the result of an automobile accident Friday night may be counterbalanced by the fact that Smith happens to decide that it is time to spend the money he has been hoarding since it was given to him at Christmas. Those changes in the usual habits that are not immediately offset probably have little influence on the integrated effect of all individual actions, unless there is a mass shift of one kind or another.

Let it now be supposed that, at the end of several years following the week used in the example, certain changes had occurred, as follows:

1. A readjustment from a war-time basis to peaceful occupations was in progress with return of men to their old tasks. The square pegs were being taken from the round holes and returned to the particular places in life that they were best qualified to fill. This naturally resulted in more efficient production.

2. Production, instead of being on a cost-plus or similar basis, was returned to the old competitive basis, another factor encouraging efficient (low cost per unit) production.

3. New inventions, especially in the mass production field, made possible increased output per worker.

4. Scientific management was more highly developed and made possible more efficient production.

For the automobile manufacturer already considered, the changes mentioned above may have resulted in greater production per week from the same number of workers, even more output from a larger number of workers, or the same production from a smaller number of workers. (There are other possibilities, such as somewhat more cars from a somewhat smaller number of employees, etc.) For convenience, let it be supposed that more cars were produced by the same number of employees.

Now, from the viewpoint of manufacturer, the need for credit originations based on his production depended on the payments he desired to make prior to receiving the proceeds from sales. Presumably, therefore, enough would have been borrowed to cover immediate and near future costs, including materials, wages, salaries, and certain charges. The vital point is that, as the cost of production was lowered, the manufacturer found it necessary to borrow a smaller percentage of the anticipated selling price. The resulting situation can be set forth in the following table.

MANUFACTURER'S COSTS AND INCOME DISTRIBUTION
(Several Years After Previous Table)

Cars Produced	Value (Wholesale)	Materials	Wages	Salaries	Charges (Misc.)	Net
120	\$60,000	\$12,000	\$20,000	\$5,000	\$10,000	\$13,000
As a percent of wholesale		20%	33%	8%	17%	22%

Note: Actual amount of new credit originated=
\$47,000 (\$60,000-\$13,000).

During the usual marketing period for the cars produced in this week, there was obviously an increase of 20 percent in the number of cars on the market. If the conditions assumed were general throughout industry, the same was true of many other kinds of goods, of the general run, in fact. But additional purchasing media representing the added goods were *not originated* by the banking system, or rather only a small part was originated, thus leaving a much larger proportion of business to be conducted with the money commodity (that is, gold coin or currency and demand deposits that represented gold) unless the price level was lowered. The result of this procedure would have been to increase stocks of goods in dealers' hands (barring any other source of purchasing media for those who would be glad to buy the goods concerned). Bankers would naturally have hesitated to make further loans when inventories of unsold goods were accumulating, especially to the marginal businesses whose credit was doubtful at best. Some of these concerns would have found it impossible to pay off loans as regularly as planned and they would have been forced to reduce prices. The price-reducing process would have continued until all the cars produced were being sold promptly, whereupon prices presumably would have become relatively stable unless there were further marked changes in other factors.

Let it be supposed, however, that managers of the

automobile concern involved believed that, as a result of economies effected, it could profit by adding to its plant and equipment. The company issued bonds for the purpose and persuaded the banking system to buy them even though savings were not available for this investment process. (The banking system thus used some of the excess reserves made available by the Federal Reserve banks to member banks in 1924 and 1927 and the process was repeated to a much greater extent in the 1960's.) The additional and inflationary purchasing media placed in the hands of consumers found its way to market and made unnecessary, or at least postponed, the price reductions mentioned above. Suppose that the banks were willing to lend on installment paper and that several financing companies saw the possibilities of profit involved. Through that means still more purchasing media (partly inflationary) may have reached the market and prevented the price readjustments one would otherwise have expected. Or vast real estate developments financed by excess credit might have provided the wherewithal. As is generally known, there was a combination of all of these developments on an increasing scale from 1922 to 1929.

When excess credit was injected into the channels of trade by these or similar means, the large net income that the manufacturer expected, as shown in the second table, was actually received. However, the inflationary credit origination had to precede the actual grasping of these profits. Inasmuch as the profits only became dividends after they (the profits) were actually received, it follows that the large return to investors could *not* have originated the inflationary process, but that the inflationary procedure made possible the large return to investors.

The question raised previously can now be answered:

1. If inflationary purchasing media had not been injected into the channels of business during the decade of the 1920's, prices in general would have *declined*. In other words, the benefits of mass production would have been passed on to the consumer in the form of much lower prices. When it is remembered that the trend of prices during that time would have been downward but for the presence of increasing inflating, it is seen that there *was* a rise in prices relative to what may be considered the normal postwar trend.

2. Consumers did not derive sufficient buying power from production because prices were kept at high levels; and prices were kept at high levels because the injection of inflationary purchasing media made it possible to sell goods at high prices. If there had been no inflating, lower prices for manufactured goods, in particular, would have been the rule and the processes of production and distribution would have financed consumption (or at least that portion of it not normally covered by direct exchange for the money commodity). Of course, if the wartime inflating had never occurred, prices would not have been so far above their long-term trend in the early part of the 1920's, and the price reductions necessary to reach more stable relationships would not have been so great.²

² See Walter F. Eade, "Mathematical Analysis of Post-War Price Falls," *The Annalist*, August 26, 1932.

VIII.

A DISCUSSION OF VARIOUS POPULAR PANACEAS

THE FOSTER AND CATCHINGS PLAN FOR PERPETUAL PROSPERITY

ONE of the seemingly inevitable accompaniments of hard times is the series of panaceas or cure-alls proposed by many well-meaning individuals in the expectation that the correction of inflationary maladjustments can somehow be avoided or rendered painless. These plans for permanent prosperity may range from such relatively innocuous schemes as the "sunshine" clubs of 1908 to the more dangerous forms of bootstrap-lifting proposed by Dr. John Maynard Keynes.

In one respect, most of these schemes are alike; that is, in their refusal, tacit or otherwise, to recognize that a period of depression is the necessary readjustment following a period of increasing distortion of the economic situation. Consequently, the cure-alls suggested are directed at the symptoms of a depression rather than at the underlying distortions. This fact in itself is sufficient ground for discarding the panaceas without further consideration. However, some have attained such popularity in the recent past that a brief examination of them, especially in relation to the subject in hand, is warranted.

The plan proposed by Foster and Catchings, as outlined in their book, *The Road to Plenty*, received support from President Hoover and others in high places. The plan was given a trial early in 1930 when new construction was initiated in large volume by public and private agencies. The scheme failed to accomplish its purpose, but its proponents insisted that the test made was inadequate. Therefore, examination of the principles on which the plan was based is necessary in order to determine whether or not it was sound.

Although the whole scheme was mistily nebulous in certain of the important details, in general it appears to have been as follows:

a. The Federal, State, and municipal governments were to plan in advance various construction projects, which, although necessary, were to be of such nature that they would form a "construction reserve." Presumably, all preliminary engineering in connection with them, including surveys and the preparation of detailed plans, was to be completed in order that work might be started at any time.

b. A public body of some nature, perhaps one similar in composition to the Federal Reserve Board (in discussing the plan in 1928, Governor Brewster mentioned the Federal Reserve Board and System as an excellent solution of those troubles that formerly beset the financial realm), was to decide when work should begin on the various public projects. In reaching its decision, this board was to be guided by certain indexes, some of which, according to Governor Brewster, were "already becoming available."

c. Because depression is the result of underconsumption, according to what may be termed the Foster and Catchings theory, it was expected that the additional purchasing media placed in the hands of the workmen employed on the numerous public enterprises would immediately remedy impending difficulties. In the words of Governor Brewster again, "The release of three billions in construction contracts by public and quasi-

public authorities would remedy or ameliorate the situation in the twinkling of an eye."

Such was the plan that was supposed to remedy a situation that otherwise would result in widespread depression and unemployment. The scheme was based on theories developed by Foster and Catchings in the book already mentioned. The underlying principles may be briefly stated (it is hoped with full justice to the authors) as follows:

1. Depression must be the result of overproduction or underconsumption; and, inasmuch as human wants have not yet been satisfied, it would appear that underconsumption is the real difficulty.

2. Underconsumption is the result of excess savings, or, in the words of the authors, "Savings cause a shortage of consumer buying, unless the deficiency is made up in some way."

3. The remedy is to place additional purchasing media in the hands of the consumers at the first signs of maladjustment. This may be easily accomplished by expenditure of funds on Government construction projects.

The nucleus of the foregoing principles is to be found in that portion of the second taken from the book itself. That is to say, the entire proposition is based on the idea that savings, unless otherwise compensated for, cause a shortage of consumer buying. Now, on the face of it, this may appear to be a reasonable supposition. However, a brief investigation will reveal the fallacy.

In the first place, savings are necessarily made from income. And income, as will be recalled from the simple illustration of money-credit functioning already discussed, is derived from the production of articles that are to appear on the market. In other words, income is ordinarily the means of distributing to individuals or groups their respective shares of current production. This is true regardless of how the income may have been obtained. The rich man clipping coupons, the poor man digging ditches, the beggar on the corner, the thief who robs a safe, the doctor, the lawyer, yes and even the Indian chief who is receiving oil-well royalties, are one and all obtaining income that are nothing more or less than titles to goods currently produced. Even where the process is indirect, as for the professional man, the income is title to current production, but the title has been transferred to him by its former owner or owners in exchange for services rendered.

Current savings, therefore, are transferable titles to goods currently coming to market. If it were the custom for all individuals who saved to bury their funds in a hole in the ground, or hide them in a sock, there would undoubtedly be a tendency, when savings as a whole were increasing, for demand to be less than supply. Some purchasing media would be withheld from the market. But such is certainly not the custom to any appreciable extent. As is well known, savings are usually placed in a bank, or with an investment organization of some kind, or are invested directly. That is to say, savings are simply handed over to some other agency that may desire to spend them (and pay for the privilege, of course). This means that savings are not purchasing media removed

from the marketplace; they make it possible for someone other than the original receiver of income to spend the funds and obtain the use of the corresponding goods. (It will be understood that, by "corresponding goods," I mean corresponding in value rather than identical in substance with those that any particular income may represent.)

The foregoing is so evidently a statement of obvious facts that it is difficult to see how savings can be supposed to reduce total purchasing media. Such being the situation, any notion advocating compensation for the supposed shortage of consumption because of savings necessarily is fallacious. It follows that such a scheme is based on errors of fact and is unsound.

The argument against this particular method bootstrap-lifting need not rest on the evidence just presented. There is another major difficulty that hinges on an incorrect view, or possibly a complete lack of understanding, of the money-credit system.

The cure proposed is for various governmental agencies to begin construction on large public projects at the first signs of depression. As already has been mentioned, proponents of the scheme assume that the large sums spent on such projects would greatly add to the purchasing media available to the public. Now, these vast sums would have to be obtained from some source, and several are available. The purchasing media might be accumulated as savings from past tax collections; or might be derived from new issues of paper money; or might be obtained through the sale of Government bonds. Each of these methods will be considered in turn.

If the sums to be spent were accumulated or "saved" from past taxes, the Government would be indulging in that very dangerous act of restricting current consumption. But this is to use Foster and Catchings' basic principle in a reduction to absurdity. Inasmuch as the principle is false, it will hardly do to be content with thus disposing of the question. Governmental savings presumably will be deposited in banks that ordinarily will lend or invest the money, thereby making it available for expenditure by others. If the governmental agencies desire to use the funds, the banks must deliver to the public bodies that are withdrawing their deposits the current savings being deposited by others. But this can only result in expenditures by governmental agencies of funds that would otherwise have been spent by other borrowers. Certainly, no net addition to the available purchasing media could result.

If the sums to be spent were derived from increased current taxes, the taxpayers would have just that much less for purposes of consumption or investment themselves. By no process of higher mathematics nor by any kind of modern accounting is it possible to divide a given sum of purchasing media among individuals of a group so that the total involved will be greater than the original sum.

If the amounts to be spent were derived from an emission of paper currency, inflating would be augmented; and, unless some way could be found to halt the process, the dollar would emulate the old German mark's unsavory reputation. This particular expedient has been tried so often that no one with even a grammar school knowledge of history should be misled by the rosy promises made in its behalf.

If the sums to be spent were obtained by the sale of Government bonds, either of two distinct situations or a combination of them would result. The bonds might be purchased by banks with savings being placed at their

disposal (or by individuals with their current savings). This, however, reverts to the first situation, involving only a transfer and not an addition to the total of purchasing media in use. On the other hand, the bonds might be purchased by the banks, with the help of the Federal Reserve banks, by the origination of credit, just as the wartime inflating was arranged. Conceivably, both situations might exist. To the extent that the banks *originated* the purchasing media with which bonds were bought, there would be added inflating precisely similar to that already described, inflating that would be reflected in the rise of the index of inflating to higher levels. But it is just this kind of abuse of the money-credit system that encourages and makes possible the evils it is desired to eradicate. Surely there is nothing to be gained from making a bad matter worse before it is allowed to get any better.

So much for the Foster and Catchings notion of planned prosperity and the construction reserve that is to remedy cyclical depressions in "the twinkling of an eye." There are a few other difficulties involved in the scheme, but it was desired to point out here only those errors that are made evident by a correct understanding of money-credit functioning.

AN ANALYSIS OF JOHN MAYNARD KEYNES' SOLUTION

A somewhat different oversaving theory of the business cycle was offered by Dr. John Maynard Keynes, and a similar variant of the earlier oversaving theory was sponsored by the Brookings Institution. As is pointed out in the Introduction both Dr. Keynes' conjecture and the Brookings Institution's research have been completely discredited. That any monetary theorists who have understood the extensive analyses by Dr. Marget, Dr. Villard, and Dr. Haberler (see the Introduction for more detailed discussion) should regard these latest versions of the oversaving theory as anything more than rather imposing refinements of essentially crude fallacies seems inconceivable. Nevertheless, these ideas have carried, and still do carry, great weight with leaders in Government, because the spending and lending program of 1934 to 1939 and the prolonged inflating during and after World War II were based on an acceptance of these notions. That many leaders in Government and not a few so-called economists accept the Keynesian notions as sound is apparent.

Probably the distinction between Dr. Keynes' version of the oversaving theory and that offered by Foster and Catchings can be most fairly and adequately explained by letting Dr. Keynes speak for himself. The following has therefore been taken from his earlier and more general discussion of the subject.¹

"Economists are familiar with a class of theories which attribute the phenomena of the Credit Cycle to what is described as 'Over-saving' or 'Under-consumption.' At bottom these theories have, I think, some affinity to my own. But they are not so close as might be supposed at first sight. The theories of Bouniatian and the European writers influenced by him, of Mr. J. A. Hobson in England and of Messrs. Foster and Catchings in the United States, who are the best-known leaders of this school of thought, are not in fact over-saving or over-investment theories, if these terms be given the same sense which I have given to them. They have, that is to say, nothing to do with saving running ahead of

¹ Keynes, J. M.: *A Treatise on Money*. London: Macmillan & Co., 1930, Vol. 1, p. 178.

investment of *vice versa*. They are concerned, not with the equilibrium of saving and investment, but with the equilibrium of the production of instrumental capital-goods and the demand for the use of such goods. They attribute the phenomena of the Credit Cycle to a periodic over-production of instrumental goods, with the result that these instrumental goods facilitate a greater production of consumption-goods than the purchasing power in the hands of the public is capable of absorbing at the existing price-level.

"In so far as these theories are capable of any reconciliation with mine, it is at a later stage in the course of events; for in certain cases a tendency for the rate of investment to lag behind the rate of savings might come about as the result of a reaction from over-investment in the above sense. In so far, however, as these theories maintain that the existing distribution of wealth tends to a large volume of saving, which leads in turn to over-investment, which leads to too large a production of consumption-goods, they are occupying an entirely different *terrain* from my theory: inasmuch as, on my theory, it is a large volume of saving which does *not* lead to a correspondingly large volume of investment (not one which *does*) which is the root of the trouble." (Italics according to Keynes.)

In a later volume², which was published in 1936, Dr. Keynes abandoned much of the argument presented in his Treatise, but clung to the basic principles that are evident in the quotation just given from his earlier work. In 1934, Dr. Keynes wrote an open letter to the President of the United States, in which he advocated a program of expenditures at the rate of about \$400,000,000 per month in order to apply his theories practically and restore prosperity in the United States. Dr. Keynes' advice, or the advice of those within the Government who were guided by similar basic theories, was accepted, and the first great spending and lending program was undertaken.

A vital element of the theory was that the Government should obtain the funds for its spending program by borrowing for the purpose. To balance the Nation's budget and obtain the increased funds by greater taxation would have nullified the beneficial effects of the spending program, according to its principal proponent. This is clearly indicated by the following brief quotation from Dr. Keynes' open letter: "Thus as the prime mover in the first stage of the technique of recovery, I lay overwhelming emphasis on the increase in national purchasing power resulting from governmental expenditures which is financed by loan and is not merely a transfer through taxation, from existing income. Nothing else counts in comparison with this. In a boom, inflation can be caused by allowing unlimited credit to support the excited enthusiasm of business speculators. But in a slump, governmental loan expenditure is the only sure means of obtaining quickly a rising output at rising prices."

A TEST OF THE SPENDING THEORY

In an article on the subject written at the time³, I commented on the spending program and the notions on which it was based, as follows:

"Recent Federal bond issues have been absorbed primarily by the commercial banks of the country.

² Keynes, J. M.: *The General Theory of Employment, Interest, and Money*, New York: Harcourt, Brace and Company, 1936.

³ The Test of the Spending Program," *The People's Money*, July, 1935.

Approximately two-thirds of the bonds sold have been taken in that way, with resulting new additions to the Nation's purchasing power. Assuming that this percentage distribution will continue, something over \$3,000,000,000 of inflationary purchasing power will be added to the flow of money (including both currency and checks) in the channels of business during the coming year.

"From the foregoing, it is plain that the spending program itself involves inflating on a large scale. The tendency of inflating is to force an artificial and unsound prosperity. Therefore the recovery process already under way will be accelerated by the spending program. The unfortunate part of it is that this acceleration will be accomplished at the cost of creating serious maladjustments in proportion to the extent of the inflating.

"It is now possible to decide what criterion to apply in judging the success of the recovery program. Clearly, recovery alone is not the only test. Of course, the tendency will be for proponents of the spending theory to proclaim it a success when a substantial degree of recovery has occurred, but careful economists interested in a scientific judgment should not be misled by first appearances.

"The vital and only satisfactory criterion is whether or not the recovery which comes in the next few months and years is sound and lasting. If it develops into a boom of ruinous proportions, or if it is found to create maladjustments which subsequently force a severe setback and make it necessary to do over again much that we thought was already accomplished, those factors must be given consideration. It is perhaps possible that a more rapid recovery than normal is worth whatever troubles may arise from the forcing process. Be that as it may, it will not be scientifically sound to pass judgement on the matter until all the evidence, including the aftermath of the recovery progress, is at hand."

Now that we have had an opportunity to see the aftermath of the practical application of Dr. Keynes' recommendations and notions, it is reasonable to condemn them on practical as well as theoretical grounds. For those who desire a complete discussion of the subtle fallacies involved in the Keynesian variant of the over-saving theory, I suggest reference to the technical discussion in the Introduction and a study of the references given there. For the layman, a brief discussion in the light of basic principles already described in this book will perhaps be sufficient. (The aftermath referred to was the 1937-38 recession, one of the most severe and most extensive in the history of the Nation. Now, as this tenth edition is being prepared, we see some of the consequences of a far more prolonged and extensive application of the Keynesian notions.)

The arbitrary injection of new purchasing media into the channels of trade without reference to the volume and value of goods currently being produced and brought to market presupposes that all of the serious maladjustments have been removed, with the single important exception of a lack of sufficient purchasing media. Although such circumstances can be imagined, they apparently never have existed. The change from prosperity to a condition of depression is in itself strong evidence that various changes should be made in our economic system in order to insure its proper functioning; and experience indicates that only the pressure of liquidation during a severe depression can correct the maladjustments that develop during an inflationary boom. By injecting new purchasing media into the channels of business, the necessary corrective pressure temporarily is relieved, and there is also a tendency to stimulate the regrowth of the same fundamental maladjustments that were responsible for the

change from prosperity to depression.

After a period of prolonged inflating during which there was a business boom of great proportions with widespread speculation, the maladjustments to be corrected are both many and serious. As the necessary liquidating pressure is applied, many innocent persons who had little or no responsibility for the original difficulty will become the victims of its corrective action. However, it is one thing for government to relieve distress by such actions as are economically practicable, and it is something else for government to undertake to relieve the liquidating pressure in its entirety. The obvious corrective from a long-term point of view is to avoid any marked inflating in the first place; and the obvious palliative during the period of depression is to succor genuine distress, but to avoid making a bad matter worse by more inflating with its inevitable chain of consequences.

Incidentally, we should remember that government itself should not be relieved from the pressure of liquidation during a period of deflating. During the overoptimism of the boom period, municipal, State, and Federal governments may have participated in the general orgy of improvident spending and accompanying unwise expansion of debt. If one of the maladjustments that arise during the boom period is a tendency for government to demand more than is economically desirable of the national income, there is certainly every reason to avoid a further aggravation of this difficulty during the subsequent depression. If such a maladjustment exists, and the governmental agencies during the tobaggan slide to depression levels greatly expand their spending and their demands on the national income while the national income itself is rapidly decreasing, this particular maladjustment will be enormously magnified. Indeed, the exactions of government under such circumstances might prevent a normal recovery movement.

That this might actually be the result of unwise government action during depression can readily be explained. It will perhaps be more clearly understood if the problem is approached from a somewhat different angle. Suppose that, given seriously depressed conditions, a government desired to perpetuate the depression and prevent a normal recovery. How could this be done?

In order to answer this question, we describe briefly how a normal recovery movement begins. In the first place, even during severe depression, there are some businesses and some individuals whose profits and incomes are increasing, or are at least large enough to encourage further expansion. The lower prices that prevail for both labor and materials during the depression phase of the business cycle invite those who have the wherewithal to take advantage of that opportunity. Individuals whose incomes have been maintained, or nearly maintained, while their cost of living has decreased are then in an especially favorable position to use their margin of savings for the construction of new homes or other expenditures that would not ordinarily have been made. Similarly, the circumstances existing at that time provide unusual opportunities for businesses that are in the expansion phase and can look ahead to the need of greater plant facilities during the succeeding years. Individuals and businesses, in the circumstances just described, are among those whose actions initiate the upward spiral of recovery from depression levels.

In the light of the foregoing, a government that desired to prevent business recovery might adopt either or both of two important programs. In the first place, it might modify its method of taxation in such a manner that the

more prosperous business corporations, which were benefiting most from a marked upward trend of demand for their products, that is, those having the best prospects for long-term growth and whose profits reflected this fact, would be penalized. This might be done by a tax on profits that would force the business corporations either to turn over a substantial portion of their profits to the government in the form of taxes, or else distribute them to stockholders, where they would no longer be available to the directing heads of the business. Secondly, the government might attempt by various means to increase prices, especially food prices and others entering into the cost of living. This would reduce the savings that might otherwise be available to some individuals and, if not absorbed by rising prices, might be used to demand new homes or other articles, the production of which would require the re-employment of some of the unemployed.

If the government wished to take further steps in order to prevent any possibility of a sound recovery, it might attempt by all the means as its disposal to discourage the normal saving and investment process. By forcing down interest rates, the incentive to save could be lessened; by raising taxes, such savings as were made could be confiscated; by selling government bonds on a large scale, savings that otherwise might press for employment in industry could be absorbed by the government; and finally, by threats of arbitrary and inflationary juggling of the monetary mechanism, the government might induce such fear that institutional investors would seek the comparative safety of government bonds in preference to corporate securities or mortgages; and the entire investing class might, by such means, be made so afraid of unusual and unforeseeable hazards that they might virtually abandon all plans for long-term investments.

If it were still feared that recovery might occur in spite of all of these precautions, the government might make its money juggling so extreme that businessmen, especially those speculatively inclined, would be tempted to desert their normal interests and turn to the speculative markets for the easy rewards apparently available. This would lead some speculators in securities, who might normally seek to place their funds in new industries having growth possibilities, to devote more attention to industries having a possibility of profit during a period of inflating. This would tend to choke the development of new enterprises, and to that extent hinder recovery. Such procedure would also practically force businessmen to speculate in inventories, rather than concentrate on the continual cost and price reductions that are essential to a progressive competitive society.

Of course, it is stretching the imagination to suppose that any government would undertake a program such as that just described, with the *announced intention* of retarding business recovery. However, if any government were so bold and so determined to prevent recovery that it dared undertake such action, it might well supplement the steps just described by aiding and abetting labor organizations, which would be encouraged to believe that only the greed and malevolence of businessmen prevented labor from obtaining its just, and a much higher, reward. By a discreet disregard of constitutional guarantees, the government might then encourage such a labor organization to block production in important industries, and thereby induce a partial breakdown of the production system.

Readers presumably will realize that the government's intentions in the matter would have little bearing, if any, on the effects of action such as that described. With the

impersonal laws that govern in the field of economics (and presumably are valid in spite of our failure to understand them in their entirety), intentions have but little influence. What counts is the action taken, or the action that businessmen and others expect will be taken.

Interesting to note is that the action appropriate for government that wished to prolong a depression and prevent a business recovery is in many respects similar to the action taken in the United States from 1934 until early 1937; and that part of the program, at least, was again undertaken in 1938, apparently with the object of continuing it for some time thereafter. This does not imply, as might at first be thought, any accusation that the New Deal failed to reveal its true objectives; on the contrary, it merely shows how a too-ready acceptance of economic nostrums can lead to action that must seriously harm the patient. It is the old story, which illustrates the wisdom of the doctor who, when he really does not know what to do, lets nature take its course except for such alleviation of suffering as may be within his powers.

The situation also illustrates the danger of treating symptoms, rather than attempting to deal with underlying causes. No matter how alarming the symptoms may be, and no matter how desirable alleviation of the pain that is one result of the symptoms may seem, care should be taken that, in relieving distress, the fundamental maladjustments responsible for the distress in the first place are not made worse.

WHAT ABOUT STABILIZATION OF THE DOLLAR?

Dr. Irving Fisher's book *The Money Illusion* and his other more erudite contributions to literature on the subject possibly are familiar to readers. In any event, the evils resulting from an unstable monetary unit have been thoroughly discussed. The fact that an appreciating dollar is favorable to creditors and that a depreciating dollar is favorable to debtors as a class requires, it may be assumed, no further elucidation.

As far as the present writer is aware, there are two apparently different schemes offered. One is to vary the weight of gold in the dollar from time to time in order that the dollar shall always have a given value in terms of other commodities. The other is to do away with the gold standard, substituting therefor a composite standard of many commodities, presumably so chosen as to represent the commodities used by the average family, or selected according to some other criterion that pleases the proponents of the plan.

The first of these schemes is deceptive in that, although it appears to adhere to the gold standard, the plan actually abandons it. ("Standard" implies preciseness and permanence of quantity and quality for comparative purposes. A monetary unit that was not definitely fixed as to quantity and quality of gold or other commodity could not properly be called a "standard.") But that is perhaps to introduce complexities that do not bear on the immediate problem. At least each of the methods is absolutely dependent on the list of commodities and other things incorporated into the guiding price index in the first case, or into the new base chosen in the second case.

Nothing is more obvious than the fact that not all commodities can be included in such lists. Furthermore, there will inevitably arise the problem as to whether or not suburban land values, stock prices, rentals, and many other items involving the use of the dollar, are to be included in the index or base, respectively. If these are to

be included, just how can the mathematics involved be handled? Are stock prices to be stabilized along with building lots? These questions will require answers, and there are still further difficulties.

An inflationary boom may derive its major impetus from speculation in almost anything. Tulip bulbs, common stocks, commodities, urban real estate, rural real estate, any old real estate (as in parts of Florida), and even gold have all been the keystones of speculative arches at some time in the past. Unless the chief object of the speculators' attention happens to be included in the index of base contemplated, what possible guarantee can there be against inflating that may arise in spite of all the stabilization schemes? Surely a serious situation might well exist simultaneously with apparent stability of the index or base in use. (Witness the course of commodity prices during the New Era boom of the 1920's.)

There is, of course, the possibility that a discretionary board might observe the results of an inflationary boom centering on one particular commodity or other object of speculation. The board then could include the article concerned in the index before a serious situation developed. But is it safe to assume that any board would be endowed with such wisdom? When it is remembered that the chief proponent of a stabilized dollar (Dr. Fisher) could find no major maladjustment in the frenzied stock market speculation of 1929, one is perhaps justified in doubting that others of less experience would do much better. A board, however well-intentioned, might not develop a higher degree of wisdom that its members could contribute as individuals.

Although the impossibility of formulating a satisfactory index or base seems to be an insurmountable obstacle, there is at least one other major stumbling-block in the path of the dollar stabilizers. The instability of the dollar is the observed effect that it is (presumably) desired to change. Both of the two cures discussed above stabilize the dollar in terms of some commodities and render it highly unstable in relation to gold and, in more or less degree, in relation to all commodities and other items not included in the index or base concerned. This is, on the face of it, not stabilization in its broader implications.

Peculiarly enough, the methods advocated by stabilizers ignore the fact that instability of the dollar is effect and not cause. A more reasonable procedure would consider the *cause* of instability of the dollar before attempting to prescribe a cure. However much Dr. Fisher and the other stabilizers may have thought on this aspect of the situation, their solutions do not reveal any attempt to deal with underlying causes. They would, in a manner of speaking, grab the dollar by the throat and force it to stabilize itself by the threat of immediate abandonment should it decline to accommodate itself to their wishes.

A bill (H. R. 10517) introduced by Representative Goldsborough in the Seventy-second Congress illustrates the manner in which the problem has been attacked. This bill, in the first section, directed the Federal Reserve agencies to "take all available steps to raise the present deflated wholesale commodity level of prices as speedily as possible to the level existing before the present deflation, and afterwards to maintain such wholesale commodity level of prices." In other words, it ordered a return to the exchange relationship between gold and other commodities that existed in 1929.

In the last section of the bill, however, the Federal Reserve Board was authorized to raise the official price of gold when the reserve is too near its prescribed minimum, and to lower the price of gold if the gold-reserve ratio is deemed to be too high. Perhaps the reader has not

realized the impossibility of reconciling two such contradictory sets of instructions. The following quotation from a letter written to Representative Goldsborough by the author on March 31, 1932, is enlightening in that respect:

“Possibly it will somewhat clarify the situation to point out that price is merely value in exchange; comparison is always implied even if not stated. While we speak of dollar and cent prices, we are actually discussing value in terms of gold. Obviously, we cannot speak of the price of wholesale commodities if the dollar is to be a certain aggregate of commodities, by definition. It is equally incorrect to speak of the price of gold today, unless we mean its exchange value in terms of other things than gold, which is not the ordinary meaning of ‘price.’ To discuss the price of a piece of gold in terms of dollars and cents is merely to discuss its weight.

“Therefore, in the first section of your bill, you prescribe that a certain relationship shall be established between gold and goods at wholesale. Then, in the last paragraph, you have provided that, in order to fix the relationship permanently, it shall be changed as often as the Federal Reserve Board may consider a change desirable. In other words, the last paragraph reduces the first to an absurdity. The logical fallacy involved accounts for the results to be expected from your stabilization scheme.”

There is hardly space available for a complete exposition of those factors that determine the value of a monetary unit. It may be confidently asserted, however, that the major fluctuations of the dollar under existing

conditions are directly traceable to the causes already discussed in connection with the business cycle. Origination of excess purchasing media by the banks at the request of individuals eager to use it inevitably depreciates the monetary unit. In the simple illustration given in Section III, this effect is apparent when \$100 worth (originally) of machinery actually sells for \$280. This is, of course, only the beginning of the process, and does not show the final result of a general price-rise as these large profits are distributed to stockholders or spent in plant expansion, overtime bonuses, and the like. The extension of the principle is too simple an affair to require further elucidation. Carried to the extreme limit—that is, until the monetary unit is valueless—the phenomenon is easily recognized. (Examples are the Continental currency of the American Revolution, Confederate currency, the German mark of 1918-1923, and others.)

Two important points stand out as a result of the preceding discussion. First, the principal plans proposed by those interested in stabilizing the dollar are inherently defective, because there is no readily available and sufficiently complete index of value of the dollar, nor can such an index easily be prepared. Secondly, those plans are further defective in that the chief underlying cause of the difficulty is ignored. (To ensure justice, it may be well to mention that certain proponents of the stabilized dollar do give the business cycle a place in the problem. However, they would have the business cycle an effect brought about, at least in part, by the instability of the dollar.)

IX.

GOLD: ITS FUNCTION AND SIGNIFICANCE

PRIOR to the panic of 1929, a few distinguished economists had discussed the possibility of a world-wide shortage of gold. Some had been so impressed with the probable consequences of such a contingency that they had recommended abandonment of the gold standard. Others were somewhat perturbed, but foresaw the unfortunate effects only after five or ten years more of general business progress. During the early years of the 1929-32 depression, there were suggestions from several sources to the effect that the underlying cause of the difficulty was to be found in a world shortage of gold; but the flood of new gold produced during the 1930's soon made the earlier fears seem ridiculous. In view of this development, this analysis includes some comment on the function of gold in the money-credit system.

A COMMODITY AFFECTED BY SUPPLY AND DEMAND

In the simple illustration given in Section III, little mention was made of gold in connection with banking or monetary requirements. That one particular commodity could be used in lieu of a common denominator of values was indicated in Section II. Designation of the particular commodity, gold, for the purpose came as the result of several circumstances on which it is not necessary to dwell. In considering the part played by gold one should keep in mind the fact that it is a commodity, and that certain relations, although more or less self-evident, are frequently overlooked.

To begin with, there is nothing mysterious or supernatural about gold. It is a simple commodity, obtained by picking it up in its natural state, or by more involved methods of production. As far as its economic characteristics are concerned, there is nothing to distinguish it from many other metals ordinarily produced, with the single exception of its use as the base for many monetary systems, that is, for the use of gold by weight as an accounting unit. However, at least one other metal, silver, also has functioned in that capacity in various parts of the world. On the whole, the use of a commodity as money apparently does not alter the underlying principles governing its production.

Price, as the word ordinarily is used, refers to the exchange value of an article in terms of the monetary unit. Of course, value is always relative; that is to say, comparison is always implied even if not stated. Furthermore, one should never lose sight of the fact that there is no concrete common denominator of steamships and watches, in spite of the fact that money is sometimes so regarded.

Although there is no way of equating houses to automobiles, and no way of adding all commodities together to make something definite and concrete, the prospective miner or manufacturer does decide what he will produce. In the normal situation the endeavor is made to produce that which will pay best, which is to say the product that exchanges for the maximum of all other commodities.

Thus it is that, when the value of wheat is low in terms of many other commodities (that is to say, when the price is relatively low) there is a tendency for growers of

wheat to turn to more profitable products, at least on those farms where other crops are practicable. On the other hand, when the value of wheat is high in terms of other commodities, there is a tendency for farmers to produce more in order to reap the advantage of the price situation. Gold, being merely a commodity, is subject to variations in supply and demand like any other. Without doubt, when gold is low in value in relation to other articles (that is, when prices in general are high), there is a tendency for producers of gold to turn to more lucrative forms of endeavor. Conversely, when gold is high in value in relation to many other articles (that is, when prices are low), there is a tendency for individuals to devote more energy to the production of gold. These tendencies are reflected in the annual production of the yellow metal, as is shown in Chart VIII.

But the foregoing does not suggest any reasons for variations in the value of gold. The supply of commodities subject to the vagaries of the weather varies widely for reasons beyond the powers of men to control. These tend to obscure the fact that demand also is important in determining value. In this connection, demand refers to desire backed by other commodities to offer in exchange. Thus, for example, the farmer who has a good potato crop can demand other commodities, whereas his neighbor, who has suffered unfortunate reverses with his crop, simply does not count as demand for much of anything, regardless of the intensity of his desires. Again, the whims and fancies of the owners of many commodities may result in a marked concentration of demand for one particular article, with resulting effects on the exchange values of that commodity in terms of others.

Now, the factors of supply and demand with respect to gold are in some respects unusual. The supply is not ordinarily subject to great variations, although there have been periods of marked increase in annual production. Taken by and large, however, the supply always available to the market is of such vast proportions that variations in current production can have an influence only after an extended period. On the other hand, demand is in large part fixed, or at least forced, because of legal requirements or customs governing bank reserves. (In some countries, custom rather than the law determines the amount of reserves held.) Consequently, that routine variations in supply and demand have been the sole factors in bringing about such wide changes in the value of gold seems improbable.

Consider for the moment a simple barter economy in which all trade is carried on by direct exchange of commodities. Such a situation does not preclude the use of definite weights of gold simply as a commodity. Let it be supposed, however, that there are no other media of exchange, no credit purchasing media. Under such circumstances, and with the supply of gold not subject to wide variations, demand for the metal presumably would change little within short periods of a few years. With progress in the arts and development of new products, there would doubtless be a need for a larger amount of the circulating medium, but such changes, even in the best of times, would be relatively gradual. Consequently, the value of gold would be relatively stable albeit possibly subject to rather wide variations over long periods (fifty years or more).

Furthermore, there could hardly be a general rise in prices because speculation was concentrated in any one field. Suppose, for example, that real estate were to become the object of a feverish speculation. The growers of potatoes and the producers of copper would have to exchange their respective commodities for gold in order to take part in the real-estate speculation; and, if producers of many other goods likewise desired to speculate in real estate, they too would have to exchange their commodities for gold (or for real estate directly) rather than for any other commodities such as copper and potatoes. As a result, prices of all articles except the principal vehicle of speculation would fall, so that their would be no rise in the general price level that included the price of the object of the speculation. In short, *barring extraordinary variations in the supply of gold*, there probably would not be marked changes in the general price-level under the conditions of a barter economy.

THE PROBLEM IN REVERSE

If, as seems to be the situation, the routine interactions of supply and demand fail to account for the known fluctuations in the exchange value of gold, then there must be some unusual influences at work. Possibly the simplest method of determining these influences will be to look at the problem from the opposite point of view. In order to do this, first conceive of a composite commodity, which is a bundle of all articles normally appearing on the market except gold. The actual composition of this imaginary commodity would be difficult to describe, even to imagine, but the notion will prove momentarily useful. Furthermore, let it be supposed that, at the beginning of the period under discussion, a pound of this commodity is called one dollar. (That is, the dollar is defined as a pound of composite commodity, rather than as a fixed weight of gold.)

If it be still further assumed that the Federal Government has a large quantity of gold and the power to print certificates called dollars, the following price-fixing scheme might be undertaken. By threatening to sell some of its vast supply, should the price rise, and by promising to buy all gold for sale at a fixed price in terms of the new dollar, the Government could probably "peg" the price of gold, at least for the time being.

If it be further supposed that, after a few months, Government authorities decided to change the legal definition of a dollar, making it one-half pound of *composite commodity* rather than a whole pound, certain events would follow. Naturally, double the number of dollars would be needed in circulation in order to fulfill the requirements of trade. The plight of the producers of gold would be especially unhappy. Whereas they formerly obtained one pound of composite commodity for a certain weight of gold (as a result of the Government's price-fixing scheme), they would get but one-half a pound under the new arrangement as long as Government authorities chose to maintain the same price for gold in terms of the composite commodity dollar (because the dollar had been changed). Producers could hardly take the new gold elsewhere in the hope of obtaining a better price, because no one would pay the producers more than he would have to pay the Government to obtain gold from its vaults. The gold producers, when faced with such circumstances, would give up their least profitable mines and continue operations only in their low-cost units.

Unfortunately for them, there is always so much gold available to the market (in proportion to annual production) that their restriction of production would not be felt immediately in the form of a radical curtailment of the total supply.

The actual course of events is very much as has just been described. Although the change in the composite commodity value of the dollar is not a matter deliberately initiated by Government authorities, it is permitted to occur by failure to correct the usual abuses of the money-credit system. Inflating, with its attendant depreciation of the dollar, is just as effective in discouraging gold production as though the Government had embarked on some arbitrary price-fixing scheme. Presentation of the matter in this manner immediately focuses attention on two important aspects of the question. The first is, Why does not the dollar continue to depreciate indefinitely, once it has started in that direction? The other is, How is it possible for the dollar to behave so fantastically without having its value in terms of foreign exchange vary widely? These will be discussed in turn.

As has been noted, depreciation of the dollar in terms of an imaginary composite commodity is necessarily accompanied by the use of larger amounts of hand-to-hand currency and of demand deposits (which circulate in the form of checks). Naturally, there is a long-term upward trend in the volume of such media as a result of the gradual increase in trade, population growth, and improvements in products. During a period of inflating, however, deposits increase much more rapidly than would be required to provide for long-term growth at normal prices. Banks in most modern industrial countries are required to hold certain reserves in gold, or the equivalent, and these reserves are stated percentages of the deposit liabilities of the banks. When an inflationary progression has continued for some time, the banks have more and more difficulty in obtaining the required legal reserves. (Fortunately, this difficulty is increased by the fact that high prices in general discourage the production of gold.) As the reserves approach legal limitations, the banks are forced to curtail new credit extensions, with the inevitable result that the major speculative boom is punctured. To the extent that its growth has stimulated business in general, there have developed widespread maladjustments, as heretofore indicated. The entire business and financial structure, honeycombed as it is with the evils of unhealthy expansion induced by the flood of excess purchasing media, shares in the collapse of the principal vehicle of speculation; and depression, with its all too familiar chain of phenomena, results.

In this connection, experience under the Federal Reserve System has confirmed the foregoing description of the course of events. In the absence of an understanding of money-credit functioning, periods of inflating have been permitted to continue until the limits of expansion have been approached. The aftermath of each such experience has been a severe and lasting depression. During the 1960's, in order to remove the restraints on inflating imposed by required legal reserves of gold, the United States first lowered then discarded such reserve requirements. Thus the post World War II inflating was continued long after it would have been brought to a halt if required reserves and the promise to redeem the Nation's currency had been retained.

The next step is to answer the second question. At first thought, it seems most curious that the foreign exchange relations of the dollar have not reflected its wide shifts in value (that is, its value in terms of the composite commodity). There is only one plausible explanation of this fact. It is that foreign currencies have themselves fluctuated to about the same extent. That such has been the situation is evidenced by the course of wholesale commodity prices in different countries, and the situation is an interesting revelation of the close association between the various currencies of the principal industrial nations. This view of the matter is confirmed by the fact that the major cyclical booms and depressions appear to have been worldwide in recent decades. As communications of all kinds have been improved, the world has become more nearly a single great economic unit.

In spite of the fact that most countries may, and probably do, contribute to the magnitude of an inflationary boom, the United States, simply because of its status as the giant producer and consumer of the world, has by far the greatest influence. How far could the New-Era inflating have progressed in Europe without the foreign loans that were floated in this country? How could Cuba have saddled itself with too much sugar without the use of American dollars? How could Brazil have engaged in its coffee price-fixing scheme without American credit? To ask these questions is to answer them, and in their answers lies the reason for the failure of foreign exchange rates to portray the rise and fall of the dollar during the early decades after World War II.

Thus far, no reply has been made to those who see a world shortage of gold in the near future. Now, the need of gold for monetary purposes, when it comes to a pinch, is in order that banks may maintain their legal reserves. Furthermore, legal reserves have been determined in a wholly arbitrary manner, and they have no logical basis insofar as the particular percentages required are concerned. Consequently, there can be no reason for refusing to lower reserve requirements if that step ever becomes necessary. Unfortunately, the lowering of reserve requirements invited the speculative public (which includes pretty nearly everyone, it appears) to carry the inflationary boom of the 1960's to even more fantastic heights than the last. But if progress should be made in the use of the criterion herein developed (that is to say, if credit abuses were avoided) there is no reason why there should be any definite legal reserve requirements at all. Although that state of affairs may seem too close an approach to the millennium, it is at least evident that legal reserve requirements might be lowered from time to time in order to compensate for shortages of gold, *if such shortages ever actually occur.*

Parentetically, appearances during a period of rising prices are bound to be deceptive (even if the rise is only in relation to the long-term trend, as in the few years prior to 1929). Rising prices reflect a falling value of gold, which, as suggested, discourages production of gold. Furthermore, rising prices require a greater volume of checking accounts (demand deposits) to carry the distributive process. Accordingly, there is less gold produced when there is *apparently* greater need for it. But appearances are deceiving in this instance. Conclusions based on such conditions, which are the result of inflating and are therefore both abnormal and temporary, are sure to be misleading, even to the point of inspiring vague fears in the minds of those who fail to understand the functioning of the money-credit system.

In order to pass judgment on the suitability of gold for monetary purposes, we should review briefly the important economic events of the past few decades. The marked changes in gold production and the strikingly large gold movements that have characterized this period can be understood only by one who views them in the light of economic developments since 1914.

The Federal Reserve System made possible an enormous increase in the Nation's circulating purchasing medium. Although the original Federal Reserve Act lowered the reserve requirements of member banks by only about 25 percent from the standards for national banks prior to World War I, a subsequent amendment that became effective on June 21, 1917, again reduced reserve requirements of the member banks. The net result was that the Nation's banks could create twice as many credit dollars on the basis of one dollar of gold reserve as they could prior to 1914.

The expansion possibilities of the Federal Reserve System were first used to a substantial extent in connection with the financing of World War I. The operations conducted at that time were precisely the same in principle as the deficit financing during the late 1930's and during World War II. The monetizing of such deficits involved inflating, and it had the effects on commodity prices that can always be expected to follow such procedure.

The final inflationary filip of the postwar financing, the Victory Loan of 1919, provided the additional inflationary purchasing media (checking accounts plus currency) that made possible the brief postwar boom. Commodity prices, which declined for a short period after the armistice, resumed their upward trend and advanced approximately 60 points (about 30 percent in the succeeding twelve months).

The short postwar boom that culminated in 1920 was followed by a severe depression, during which much of the inflationary purchasing media that had been injected into the channels of business was withdrawn from circulation by a simple reversal of the original inflationary procedure. (In other words, the banking system deflated by selling securities and calling loans on securities that had been acquired in creating the war and postwar inflations.)

The first postwar depression reached its low point in 1921, and business moved upward with increasing rapidity during the latter part of that year and 1922. Commodity prices likewise turned upward, a few months later, in early 1922.

During the decade of the 1920's we finally took full advantage of the expansion possibilities offered by the Federal Reserve System. In 1921, 1924, and again in 1927, the Federal Reserve banks, through their open-market operations, encouraged a continued expansion of bank credit that made possible the great speculative boom that collapsed in 1929. During this period of several years, the serious maladjustments that had to be corrected during the 1929-32 depression were brought into existence. In general, this was a period of irregularly developing but prolonged inflating.

A REMARKABLE FORECAST

That the expansion possibilities of the Federal Reserve System might have the results that were experienced during the period 1921 to 1932 was foreseen by one who

played an important part in creating the Federal Reserve System.¹ He so well described the inflationary expansion period of the 1920's and the subsequent severe collapse that every American citizen should read and grasp the significance of his statement. Although the words that follow were spoken in 1913, they accurately describe the course of events from 1921 to 1932, as well as those in more recent decades.

"The psychology of inflation is interesting and it is well understood. No phenomenon exhibited by human nature has been the subject of more thorough, careful, and earnest study than that presented by the great multitude of individuals making up the business world in any country in the process of gradual inflation. It is as constant as the fundamental qualities of humanity, and it differs in different countries only in degree, according to the hopefulness and optimism or the natural conservatism and caution of the people.

"If the people of the United States have not wholly changed their nature from the nature which has been exhibited in all the financial history of England, from which many of us came; in all the financial history of France, from which many of us came; in all the financial history of Germany, from which many of us came; of Austria, of Italy; unless our human nature has been changed, we may confidently expect that under this proffer of easy money from a paternal Government, available for every one of us, available to send the lifeblood into the enterprise of every quarter of our vast country, available to enable all the young and hopeful and energetic Americans, east and west and north and south, to embark in business ventures which will lift them up from the hard conditions of daily toil, we may confidently expect that the same process will occur that has occurred time and time and time again in other countries.

"That process is this: Little by little the merchant, the manufacturer, the young man starting out for himself and with good character, enough to give him a little credit; the man with visions of great fortunes to be won; the man with ideals to be realized; the inventor, the organizer, the producer; little by little, with easy money, they get capital to begin business and enlarge business. As the business enlarges sales increase, and prosperity leads to the desire for growth. They all have before them spectacles of great fortunes made by the men who have grown from small beginnings to wonderful success—the Wanamakers, the Marshall Fields, the great manufacturers, the Fords. I could enumerate a thousand whose example, whose phenomenal success to-day inspires young Americans with boundless hope. Little by little business is enlarged with easy money. With the exhaustless reservoir of the Government of the United States furnishing easy money, the sales increase, the businesses enlarge, more new enterprises are started, the spirit of optimism pervades the community.

"Bankers are not free from it. They are human. The members of the Federal Reserve Board will not be free from it. They are human. Regional bankers will not be free from it. They are human. All the world moves along upon a growing tide of optimism. Every one is making money. Every one is growing rich. It goes up and up, the margin between cost and sales continually growing smaller as a result of the operation of inevitable laws, until finally someone whose judgment was bad, someone whose

capacity for business was small, breaks; and as he falls he hits the next brick in the row, and then another. and then another, and down comes the whole structure.

"That, Sir, is no dream. That is the history of every movement of inflation since the world's business began. and it is the history of many a period in our own country. That is what happened to greater or less degree before the panic of 1837, of 1857, of 1873, of 1893, and of 1907. The precise formula which the students of economic movements have evolved to describe the reason for the crash following this universal process is that when credit exceeds the legitimate demands of the country the currency becomes suspected and gold leaves the country.

"So, Sir, I can see in this bill itself, in the discharge of our duty, no influence interposed by us against the occurrence of one of those periods of false and delusive prosperity which inevitably end in ruin and suffering. For, Mr. President, the most direful results of the awakening of the people from such a dream are not to be found in the banking houses—no; not even in the business houses. They are to be found among the millions who have lost the means of earning their daily bread. They are to be found in the dislocation and paralyzing of the great machinery which gives the value to the product of the toiler by transporting it from the place where it is produced, and is worthless because there is no one to use it, to a place where it can be used and by finding someone to use it who will pay for it.

"Mr. President, this question for all my friends in the west, the farmers of the west, is not a question of country banks. It is a question that goes far deeper than that. When the farmer has put his toil and his savings into his crop of corn or wheat or cotton, for the reward of his industry and its continuance in future years and the support of his family, he depends upon what? Why, Sir, upon the continued and effective working of this vast machinery of transportation, distribution, and payment; and if that machinery is dislocated, if a necessary part refuses to work, it is like striking with a sledge hammer the machinery of the automobile; the car stops. The effect of such a period of inflation, of false prosperity, and of inevitable catastrophe, is to deprive every producer upon the farm, in the mine, in the factory of the reward of his labors. . . .

"So we are all moving in the same direction, in a direction which, unless brakes are put on somewhere, is going to land us in inflation. I conceive it to be our duty to put the brakes on and not leave it for anybody else to do it, or not to do it, as he sees fit.

"Now, let me turn more directly to the consequences of the inflation which seems to me to be inevitable if we pass this bill as it is. I have said that a crash inevitably comes from the kind of process which easy money produces. But, Mr. President, long before that crash comes the rest of this world of commerce that we have so recently really entered upon will have seen the signals of the approaching storm. . . .

"So, Sir, if we enter upon this career of inflation we shall do it in the face of clearly discernible danger—danger which, if realized, will result in dreadful catastrophe."

In late 1932, a natural recovery began from the severe depression that fulfilled the prediction just quoted. But it was destined to be shortlived because it was interrupted by the banking crisis of 1933. As everyone knows, we embarked on another great inflationary spree in 1934, which continued until late 1937 and early 1938 when deflating was the order of the day.

Not satisfied with the rather obvious proof that inflating does not provide a sound and lasting cure for business depressions, the Government initiated another

¹Speech of the Hon. Elihu Root in the Senate of the United States, December 13, 1913. *Congressional Record*, Vol. 51, Pt. 1, pp. 830-838.

great spending program in 1939. This was subsequently expanded far beyond the limits planned by the inflationary financing of World War II. As this revised edition is written (1974), the Nation is far along in a great inflationary progression. There has been some deflating from time to time, but the total of inflationary purchasing media still in circulation is far more than was available in 1920, 1929, or 1936.

Such is the broad picture of the course of economic events since 1914. It is a series of developments that should deflate any exaggerated notions that we may have regarding our ability to conduct our economic affairs with an intelligent appreciation of the lessons from past experience, but that is beside the immediate point. The question at hand is, How did the money commodity, gold, function during the period in question?

WAS GOLD AT FAULT?

The transition from the banking system as it had been until 1914 to the new Federal Reserve System was carried out slowly and deliberately. Probably it was not until the latter part of 1915 that the greater credit expansion possibilities of the banking system had any appreciable effect. By that time, the effects of World War I on commodity prices were in progress. Under such circumstances, how should gold production have responded in order to serve as a satisfactory money-commodity?

Prior to the United States Treasury's gold-sterilization program, which was begun late in 1936, all newly-produced gold that came to the banking systems of the world became circulating purchasing media. When the sterilization program was, for all practical purposes, abandoned, this again became the actual situation. Many people have failed to realize that such was the case. The mechanism is essentially simple. The Federal Treasury deposits a certificate, representing the new gold brought to it, with a Federal Reserve bank. The dollar value of

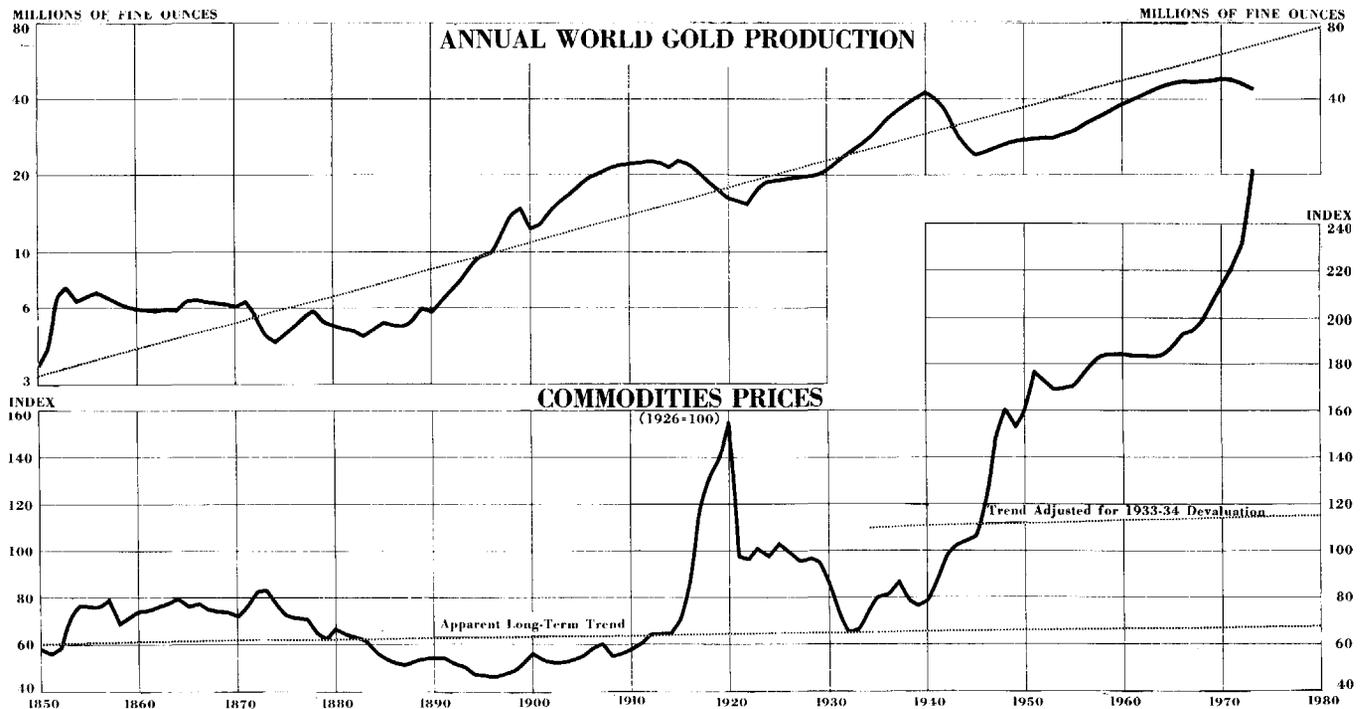
the gold is thereupon credited to the checking account of the Treasury at the Federal Reserve bank, and this new amount of purchasing media goes out into circulation when the Treasury writes checks against it to pay for the gold, or for other purposes. Obviously, therefore, all of the gold that lies buried at Fort Knox (with the exception only of that which has not yet been sterilized) is actually in circulation as purchasing media, either in the form of Federal Reserve notes (our principal paper currency), or checking accounts.

Gold brought to the banking system does more than remain in circulation as purchasing media, however; it also serves as a basic reserve, both for the Reserve banks themselves and for the member banks of the system. Consequently, new gold brought to the banking system increases the capacity of the member banks and the Federal Reserve banks for creating new purchasing media. Depending on the actual reserve requirements in effect, each dollar of gold in reserve can be used as a basis for several times as many dollars of purchasing media, which will circulate in the form of currency or checks drawn on checking accounts.

Obviously, with required reserves substantially decreased, a large inflow of gold from Europe, and commodity prices already sharply on the upgrade, it would have been highly desirable for new gold production to decrease during the years immediately following 1915. In the absence of such a decrease, the inflationary possibilities involved in lowered reserve requirements would have been supplemented by rapidly growing reserves as a result of an increasing annual production of gold. However, gold production during the six years following 1915 decreased greatly, as is plainly shown in Chart VIII.

Gold can certainly not be held responsible for the second great decrease in reserve requirements, which was made effective in June 1917. By this means, we greatly lengthened the inflating rope with which we subsequently

CHART VIII



proceeded to hang ourselves in spite of the gold standard.

When the great decline in commodity prices occurred during 1920 and 1921, gold producers regarded it as the first step in the postwar price fall that was generally expected. Consequently, gold production turned upward again shortly thereafter, apparently in anticipation of a continuing decline of commodity prices. In thus responding to the situation, gold was simply performing as it should. The change in the rate of production offset in part the severity of the declining postwar price trend that ordinarily would have followed during the decade of the 1920's.

Events were not permitted to take their normal course, however. The Federal Reserve banks, acting largely under the leadership of the New York Federal Reserve Bank, engaged in extensive open-market operations (purchases and sales of securities) in 1921, 1924, and 1927. These manipulations were well timed to encourage complete use of the remaining great expansion possibilities of the Federal Reserve System. How did gold production respond to this series of events?

The brief upward spurt of gold production, following the first postwar depression, soon levelled off as it became evident that commodity prices were not being permitted to follow their natural postwar trend. Commodity prices recovered from the 1921 lows to the plateau on which they were supported during most of the decade of the 20's by the increasing inflating. This was in turn made possible by the great elasticity of the Federal Reserve System, and was deliberately encouraged by the Federal Reserve Board through the open market operations of the Federal Reserve banks. (This was brought out in testimony given at the stabilization hearings in 1927.² In answer to a direct question regarding the possibility of stabilizing the price level by restriction or extension of credit facilities, Governor Strong of the New York Federal Reserve Bank replied, "I personally think that the administration of the Federal Reserve System since the reaction of 1921 has been just as nearly directed as reasonable human wisdom could direct it toward that very object." At another time, George W. Norris, Governor of the Philadelphia bank, said that the Federal Reserve Board "as a body have followed the policy as far as it lay within their power under the existing law, of stabilizing credit to the extent that stabilization of credit might have influenced prices."³)

By levelling off instead of continuing on up above its prewar highs, gold production did all that it could to save us from our own folly. Gold production was in no way responsible for the inflationary boom of the 1920's. By failing to increase greatly, it limited the expansion of reserves, and thereby prevented the origination of even greater quantities of inflationary purchasing media at a time when a large amount already had been created.

With the collapse of the great speculative bubble in 1929, the belated adjustment of commodity prices to prewar levels began. During the next three years, prices trended persistently downward. Naturally, the process of liquidating the serious maladjustments that had arisen during the decade of the 20's required a long period of painful readjustment. This was the great depression, the morning after the night before, which always follows an inflationary spree. The primary cause of the severity of the depression was of course the magnitude of the

maladjustments that developed during the preceding speculative boom; but our depression difficulties were intensified by unwise efforts to cope with the situation, such as the wholly unjustifiable tariff increases of 1930 and various abortive attempts to sweep back the economic tide. How did the money-commodity, gold, function under those circumstances?

Immediately after prices had turned downward in 1929, gold production turned upward. By the time the depths of the depression had been reached in 1932, gold production was increasing beyond its prewar maximum. This meant increasing quantities of new purchasing media brought into the business system a soothing restorative to relieve the serious pangs of its economic disorders and inject new life into the channels of trade.

The liquidation of past errors was completed, and a turn for the better came in the summer of 1932. Business began to move forward once more on a sound basis, and gold production began to level off along its estimated long-term trend. But all this was short lived, for intimations of what was to come under a new administration ended the recovery.

The determination of Roosevelt to abandon gold and do something for silver apparently became known to large financial interests in January 1933.⁴ Obviously, the run on gold that followed cannot, by any stretch of the imagination, be blamed on the yellow metal or its performance as the money-commodity. Nor was the startling spectacle that followed of a nation deliberately pushing down its own currency in the markets of the world in any way attributable either to an intrinsic quality of gold or to some characteristic that it had suddenly acquired. These were clearly bull-in-the-china-shop experiments, for which human beings and not gold were solely responsible. (Not until 12 years after these developments was the general public informed, through disclosure of sections of the Morgenthau diary, how completely irresponsible the actions of the bull-in-the-china-shop had been.)

Following the devaluation of the dollar in 1934, gold production increased markedly, and within two short years was warning that another mistake had been made, that the dollar had been valued far too low in terms of the other currencies of the world. The Treasury tried to grapple with the problem by treating symptoms instead of causes, that is, it initiated the gold sterilization program, which prevented newly acquired gold from becoming the source of additional currency and bank deposits. Within a few months, increasing gold production and a flood of gold to this country proved the folly of that experiment, which was later abandoned.

World gold production continued to increase until 1941. Wartime restrictions on gold mining disturbed somewhat the normal relationship between gold production and prices. However, gold production decreased greatly after 1941, as inflating proceeded in most leading nations of the world. When the wartime restrictions on gold mining were discontinued after the war, gold production increased slightly, but remained far below the prewar level. That this was a direct response to the higher costs of mining that resulted from higher prices and wages generally, seems obvious.

From the foregoing, one can see that gold as the

²"Stabilization Hearings" (69:1) Government Printing Office, 1927, page 307.

³Hearings on the Strong Bill, HR 7895, Government Printing Office, 1927, page 396.

⁴Sullivan, Lawrence: *Prelude to Panic*, Washington, Statesman Press, 1936. See also Spahr, Walter E.: *An Appraisal of the Monetary Policies of our Federal Government*.

money commodity has practically a perfect record, at least during the past fifty years.

THE COMMODITY DOLLAR

One of the interesting suggestions that has been made with the object of preventing cyclical fluctuations in business is that the gold reserve should be abolished and that the monetary unit should be a composite commodity. At first thought, that any portion of the human race should be engaged in extracting gold from the ground in some localities for no other purpose than to put it back into the ground at a different place does seem ridiculous, but, as with many other human activities, however, the underlying significance of the process is not visible to the naked eye. In order to appreciate the primary function of a gold reserve, one should begin with a less complex economic organization.

Not very many years ago, on the American frontier neighbors customarily assisted one another in such heavy work as logging operations, barn-raising, and other tasks too great for one man unaided. In other words, if a man desired a new barn, he would arrange to borrow the services of others. Naturally, such borrowings had to be repaid on demand, and with equivalent value. At bottom, it was a process by which time units of human effort were borrowed and repaid. With the development of a more complex economic scheme, individuals began to use part of the time remaining after acquiring a bare subsistence for the production of goods to lend. Instead of borrowing man hours, the product of man hours was borrowed. Because a man's title to a share in current production soon came to be evidenced by credits to his bank account his share of the lendable surplus was stated in dollars and cents and became known as his savings. The individual who desired to acquire the use of another's surplus production, therefore, borrowed the dollar savings and obtained the actual goods involved by purchase in the open market.

In the present system, the fundamental simplicity of the process has been hidden. However, this should not be permitted to obscure the fact that the lender is giving up claims to time units of human effort, and that he expects the borrower to repay an equivalent amount. But with a complex money-credit scheme it is rather difficult to specify the equivalent amount to be returned for any particular advance. Naturally, lenders have insisted on some standard that would, as far as practicable, ensure the return of the precise number of human-effort units lent. To date, in the history of the world, no other

substance has performed this function as well as has gold. For that reason, primarily, gold became the unit of account and "standard of value." From the foregoing one can understand that the gold reserve of the banking system serves a useful purpose. It is the best available guarantee to the lender that he will be repaid substantially the equivalent of his original loan.

Nevertheless, some have argued that a composite commodity base would serve equally well. Possibly it would if the base could be properly constructed statistically, and if lenders had confidence in its stability. However, lenders might not be satisfied with contracts similar to those at present in general use, if the monetary unit were not gold. Perhaps a lender wants returned only the same goods that were involved, but there is at least the possibility that he desires a return of the human-effort units he has lent. A long-term upward trend of the standard of living indicates that human-effort units are increasing in exchange value.

Considering the problem from the viewpoint of a frontier group may be helpful. If one of a dozen neighbors has borrowed the services of his friends for two days in order to erect the frame of a new barn, he would naturally expect to repay the loan at some future date. Suppose that, before the debt is paid, there is some improvement in methods that makes it possible for the same number of neighbors to erect a house which, at the time the first barn was erected, would have required twice as many days as the barn to construct. What does the first of the dozen neighbors owe to the last one? Does the former owe the latter two days' work, or only one, inasmuch as two days' work will now mean twice as much accomplished as when the twelfth neighbor worked for the first? After all, neighbor number 12 gave up two days of his life, and it is only fair to suppose that each day of his life is just as valuable to him as the days of number 1 are, in the latter's opinion.

In any event, use of the gold standard presumably reflects the belief of the lender that he can best assure himself a share in future technological improvements by specifying gold as the value measure involved. In other words, centuries of experience have resulted in general confidence that gold more nearly measures human-effort units, past, present, and future, than any other substance, except possibly silver in certain parts of the world. In a sense, therefore, the mining of gold and the accumulations in bank vaults make possible all the elaborate mechanism of the present economic order. Confidence on the part of the lender is a primary requisite for obtaining the large aggregations of capital involved in modern production facilities.

X.

CONTROL POSSIBILITIES

IN the light of the preceding discussion, one can see that wise use, rather than abuse, of the Nation's money-credit mechanism would involve a marked change from the methods that have been followed for many years past. Wholly aside from any question of extreme cyclical movements in business, the failure of approximately one-half of the banks in the United States during the years 1921 to 1933 inclusive proves that something was seriously wrong with the Nation's money-credit mechanism. That the problem should be handled differently in the future seems obvious; and this raises the question, What practical steps can be taken in order to bridge this chasm between the reckless abuse of the banking system that has made possible the extremes of the business cycle and the wiser use of our money-credit facilities that can be imagined for an ideal economic system? We do not suppose that the transition can be made in one jump or within a short period of time. However, by starting in the right direction, we can at least be sure that every step will bring us nearer to the ultimate goal.

Whatever is to be done in the future must have its beginnings in the present, and the present situation can be understood only by remembering that it is an outgrowth of the past. Therefore, we review briefly those events and circumstances of the past six decades having continuing effects that must still be taken into consideration.

Just prior to World War I, there were many indications that the economic system was not functioning in the ideal manner that economists have sometimes called the condition of free, or perfect, competition. If the poor were not getting poorer, at least the rich were getting richer; and the middle class apparently was not receiving the full measure of those benefits that the technological advance seemed to promise. There were bread lines in 1913; and there were many who, as a result of our peculiar institutions and customs, were receiving unearned incomes¹ at the expense of their fellow men. In short, there was ample evidence that serious maladjustments, the effects of which were apparent several decades earlier, were becoming an increasingly important long-run problem. These conditions existed together with the ups and downs of the business cycle that have occurred for many decades.

WORLD WAR I

World War I brought great prosperity to the United States, at first, because of the unprecedented demand for the products of agriculture, and later, because of the demand for our manufactured products. When this country entered that war, inflating was chosen in preference to the increased taxation plus borrowing of savings from current incomes that would have met the Government's expenditures. This inflating provided large quantities of inflationary purchasing media, forced the already high prices of goods to very much higher levels,

¹ Incomes are not "unearned" in the sense here intended if they are an interest return on an individual's or businesses' invested savings from income originally earned by its recipient. Incomes from monopolies and special privileges such as rights to "unearned increments" would be considered "unearned."

and boosted the prices of agricultural products. Thus the speculation in farm lands that marked the closing years of the decade was facilitated. The older farmers in the West and Middle West who sold out at boom prices joined the trek to California, there to live on their suddenly acquired wealth until part or all of it was lost in the great debacle ten years later. (The remnants of that migration probably were supporters of the \$30-every-Thursdays plan and other old age pension schemes that bedeviled the Californians in particular, and spread from coast to coast.)

After the brief but severe deflating of 1920-21, inflating gradually was resumed. As has been already pointed out, would-be money managers in important key positions attempted to stabilize the price level by an easy-money policy. For the first two or three years, business responded only moderately, but the response was more impressive as more and more people became convinced that the return of prices to pre-war levels would either be permanently prevented or indefinitely postponed.

THE NEW ERA

The inflationary purchasing media that were slowly poured into the channels of business made possible windfall profits for industry and invited the speculation that began to grow apace. In 1925 and 1926, the speculative mania found an outlet in the great Florida land boom, but thereafter speculation was centered primarily in the stock market. The increasing marginal purchases became a source of more inflationary purchasing media which flowed out into the channels of business and helped to maintain the business boom on which the speculators were gambling.

From 1921 to 1929, the degree of inflating was fluctuating but was slowly increasing. During most of that period, business activity was maintained at high levels. Commodity prices were supported on a plateau nearly 50 percent higher than prewar levels. The description of conditions during that period, given as a prediction in a speech by Elihu Root, has already been quoted. However, the conditioning effects of such circumstances on those who were coming into business life and were moving on to great success during those years should be thoroughly understood.

Prolonged inflating creates an Alice-in-Wonderland world for businessmen. Speculative risks that, under ordinary circumstances, no sane man would consider, change their character and become safe investments; that is, they are safe for the time being, at least. Men with long experience in the business world, accustomed to evaluating risks and steering a safe course between the Scylla of overextension on the one hand, and the Charybdis of stagnation on the other, are actually handicapped by their knowledge and prudence during a period of inflating. By younger and smarter men, they are labeled old fogies, even though the younger men do not understand the conditions that make such labels temporarily correct. The older business virtues, thrift, hard work, and the development of character over a period of years, character of which the hallmark is a fine personal integrity, naturally seem unnecessary adjuncts of business

life to those who can obtain success by traveling a much easier route.

Irrepressible youth, perpetually seeking opportunities, pushed open the door to business success that opened easiest. The details are easy to follow. For example, a young man in an average American city envisioned a real-estate development for those who were moving up into the higher-than-prewar income classes. Probably, when he first approached the various banks in the city for financial backing, his scheme was considered too speculative. However, as prosperity continued, he eventually found a sympathetic banker who had somewhat his own attitude toward the "old fogies" who were holding back progress in a rapidly moving world. That bank took a chance, and it succeeded for the time being. Naturally, the banker responsible was credited with shrewd foresight and wisdom. More speculative ventures were financed, and more succeeded. The other banks in the community, faced with the increasing competition which resulted from the willingness of one or two banks to regard the future more optimistically, were likewise forced to seek young blood and to join in the great procession which gave every appearance of being genuine progress. Of course, some of the banks resisted the easy-money ideas to the last; but in general the banking system was honey-combed with institutions engaged in essentially speculative activities. Even one of the largest commercial banks in the Nation, supposedly a tower of financial strength and wisdom, ended the "new era" with a man at its head whose principal qualifications seemed to be that he was an exceptionally able bond salesman. His conduct demonstrated that he had little or no knowledge of commercial-banking traditions.

Not only in banking and real estate were the conditioning effects of long-continued inflating visible. In every walk of life there were parallel developments. The road to success in the public-utility field was via the juggling of corporate super structures and the sale of securities to an ever more greedy and gullible public. Service to the consumer at lower and lower cost in order that the industry might grow as a result of the highly elastic demand for its products became a secondary consideration in the minds of many of its leaders. There is no doubt that the Insulls and others who followed a similar road to fame were aided by these conditions. The construction industry benefited greatly during this period, if such hectic prosperity can really be considered beneficial. Promoters with more vision than stability planted hundreds of great skyscrapers in growing cities that would not be able to use them economically for many years to come. But even the securities representing these great undertakings were not enough to satisfy the insatiable appetite of an investing public that wanted safety and six percent. The investment-banking business found its products so easily marketable that it finally undertook the wholesale manufacture of investment trusts, in order to provide even more securities to meet the public's demand.

Young men graduating from college during the "new era" years were agreeably surprised to find that there were many prospective employers eager to offer them "positions" (not mere jobs). They saw the rapidly rising stars of those who had graduated only two or three years earlier, and naturally assumed that such was the way of the business world. The idea of working a lifetime to become competent and able to earn a fair income never occurred to many of them. It seemed perfectly obvious that only fools and constitutional drudges actually

worked hard. People with brains got paid for being smart. In greater or less degree, this erroneous conception of life was accepted by too many whose natural abilities and education made them the prospective leaders in the business world. Those who were occupying the less fortunate positions in life were likewise conditioned by the inflating process. Why take the trouble to acquire the skill and judgment of an expert carpenter, when the great demand for construction mechanics made it so easy to get a job at high union wages with half the preparation and knowledge? Why bother to be a good automobile mechanic, conscientious and thorough, when there were so many new rich who did not know whether their cars were properly repaired or not, and who almost didn't care? Why pay for the things you wanted when credit provided a magic carpet, on which all the neighbors were riding?

It is not surprising, therefore, that during the 1920's most people's ideas regarding our economic system became further and further removed from the realities of life. Delusions of economic grandeur seemed no more than a healthy optimism. Men naturally assumed that they had earned whatever reward they received from the economic system; and all too many individuals accepted the notion that boom-time salaries or profits measured their true worth to society.

The extent of those delusions is almost incredible to us when we look back with the knowledge gained from experience during subsequent years. How hopelessly fatuous it was to suppose that the business-cycle problem had been solved; how absurd to believe that the chicken in every pot and two cars in every garage would narrow that widening gap between poverty and great wealth that seems to be a principal long-range problem resulting from our peculiar institutions and laws; how absurd beyond measure were the silly articles, such, for example, as one by the head of a great corporation who explained for the readers of a women's magazine how everyone might buy common stocks and ultimately enjoy the luxury of the gods while dividends rolled in and continually rising prices augmented the wealth of each family! That those Utopian dreams were accepted as sound common sense now seems incredible.

THE DEPRESSION YEARS AND THE NEW DEAL

During the early depression years, there was at first almost complete refusal to face the facts that became more and more obvious as time went on. No one wanted to believe that the great boom had been only a mirage, that the hectic prosperity of the late 1920's had been apparent rather than real.² The new construction panacea and such things as the "buy now" campaign were therefore eagerly grasped. Even the seriously harmful tariff increases of 1930 were accepted by citizens who still wanted to believe that a good tug at the bootstraps would start the Nation soaring again.

By 1932, however, the public had become generally disillusioned. Many of the false leaders who had gained the seats of the mighty during the days of the great inflation had been "liquidated" along with their depre-

² Some observers have argued that the prosperity of those years was real, rather than apparent, inasmuch as the large money incomes and new homes, new cars, etc. actually existed. However, this ignores many other important factors. It fails to place in the balance those costs in terms of serious maladjustments that were a less obvious but equally real part of the economic developments at that time.

ciated securities. Political leadership, which had at first refused to admit the seriousness of the depression, and had been too willing to lead in the wrong direction, at last came to grips with the facts; but it was too late, from the public's point of view. There is ample reason to believe that the average American citizen had more common sense than most of his leaders and many observers gave him credit for. He was thoroughly disillusioned, and well realized that he was suffering the after-effects of a great spree, even though he could not have analyzed its underlying causes. The proof of this assertion is available in the public's reaction to the political platforms offered in 1932. Possibly the election of a Democrat in that year was the result solely of a protest vote, but it seems more probable, especially in the light of subsequent developments, that Roosevelt was elected because the 1932 Democratic platform was soundly constructive, and because it promised economy and a common-sense approach to national problems, rather than a program of will-o'-the-wisp chasing after Utopian dreams.

By the early winter of 1933, however, several weeks before the presidential inauguration, there were indications that some of the campaign promises of the preceding fall had been made with tongue in cheek. Phrases in Roosevelt's campaign speeches that had been generally accepted as having one meaning were being defined differently in whispers that apparently reached Congress and certainly reached some who were in a position to reap great advantage from the changes predicted. These rumors gave new hope to the inflationists and to the false leaders of the boom days, who were still insisting that bootstrap-lifting could restore their brand of prosperity.

But the whispered rumors also had other effects. They aroused both fear and cupidity. Those who feared losses as the result of dollar juggling to come demanded gold from the banking system, in order to hoard it against the uncertainties of the future. Precisely the same steps were taken, albeit for a different reason, by those whose cupidity was aroused. They foresaw an opportunity for great speculative profits, but realized that those whose wealth was in the form of gold would have a much better opportunity to take advantage of whatever situation arose. During February of 1933, there consequently occurred something that had not been seen for many decades in this country. The public, or rather those shrewd individuals who wished to hoard, demanded gold from the banking system, whereas they had formerly been satisfied with the paper currency and the pledge to redeem it in gold that had not recently been questioned. The insistent demand for gold made the hoarding movement of early 1933 unlike any that had recently preceded it, and this demand finally provided the excuse for closing every bank in the United States.³

³ It has sometimes been asserted that too large a proportion of the Nation's banks were insolvent and in a generally unsatisfactory condition even as late as 1933. The facts do not bear out this contention, however. After the bank holiday, banks holding 90 percent of the Nation's deposits were found to be in a satisfactory condition, and were reopened for business. In so far as the National banks not allowed to reopen were concerned, by far most of them could not have been in a seriously unsound condition, inasmuch as many soon paid depositors 100 cents on the dollar, or more. The latest Comptroller's Report indicates that nearly all of the depositors were paid in full, in many instances with some interest on their deposits. Apparently only those banks holding about two to three percent of the Nation's deposits were in an unsatisfactory position early in 1933. Probably many of them were closed before the bank holiday, and it is obviously incorrect to assume that the bank holiday was forced because too many of the country's banks were insolvent. It is generally known to economists and bankers that the banks were in a much more critical situation when the bond market reached its low point in the spring of 1932 than they were in the early winter of 1933.

The closing of all banks in the country created a state of emergency, thereby making it seem desirable that the President be granted extraordinary powers. During the months that followed, the public witnessed a bewildering series of events. First, some attempt was made to carry out the economy pledges of the 1932 Democratic platform, but several new ideas, which had not been mentioned during the presidential campaign of the preceding year, were being advanced in high administrative circles. Special interests seeking private advantage and peddlers of economic panaceas were permitted to influence governmental policies. It is unnecessary to review in detail the NRA experiment, the deliberate "bearing" of the dollar in the foreign exchange markets of the world, the attempt to make silver part of the monetary base, and the other fantastic experiments undertaken at that time.

Finally, the first great spending and lending experiment, as advocated by Dr. John Maynard Keynes of England, was undertaken. Many of the pseudo-economists who had found common stocks on a "permanently high plateau" in September 1929, the radicals who are liberals at least in the spending of other people's money, and all the inflationists of every variety were strong supporters of the great spending spree. With their advice, the Government undertook the difficult task of putting the Humpty-Dumpty prosperity back together again and replacing it on its 1929 wall, or a higher one, if that could be found.

By late 1936, business was moving rapidly upward. The prices of speculative securities and commodities were reflecting the public's enthusiasm, and real prosperity seemed almost within the Nation's grasp. Hope returned to those who wanted to believe that bootstrap-lifting really could perform the miracles that seemed so near in 1929. When President Roosevelt asserted in no uncertain terms that "we planned it that way," his words sounded convincing to the additional millions who tipped the scales so decisively in his favor in the fall elections of 1936. In spite of the agony of the preceding depression years, many people were convinced that there really was a Santa Claus after all; and Santa's bag of something-for-nothing is the most tempting bait in the world.

The inflationary boomlet did not continue for long, however. Less than twelve months after the one-sided election of 1936, the stock market was experiencing sinking spells that revived memories of 1929. The prosperity built on Government deficit inflating collapsed like a house of cards. Business had never before been prostrated so quickly. In ten months, industrial production slumped as far as it had in the first three years of the 1929-32 depression. Obviously, something was seriously wrong with the New Deal's synthetic prosperity.

By April 1938, the Administration had become desperate. However, just as in 1930 the Nation's leaders could offer no better solution than more new construction when too much inflationary bank credit had already been frozen in grandiose apartment hotels, the Roosevelt Administration was unable to offer any other solution than to resume the spending that had created such an unsound prosperity.

WORLD WAR II AND AFTER

Before the second great lending and spending program could be inaugurated, a recovery cycle of business began. The evidence that confirms this belief is unusually

complete.⁴ The further recovery of business activity that followed was pushed far beyond the normal range of such developments by the great inflating that accompanied World War II. The spending program that was intended as a second trial of the Keynesian theories became merged with and was dwarfed by the huge wartime expenditures.

Instead of promptly reversing the inflationary procedures at the end of the war, the inflating increased for several months, until the first postwar peak was reached in the summer of 1946. Some deflating followed, and its effects were quickly evident in the stock market, although commodity prices continued to rise for several months. At this writing (May 1947), most of the inflationary purchasing media created during the war remain in circulation. Unless further deflating occurs in the near future, it is difficult to believe that prices will fall far or remain low for more than a brief period. (Note: the last two sentences first appeared in the 1947 edition.)

SUPPLEMENT, JANUARY 1950

We now (January 1950) know that the views expressed in May 1947, which were based on what the index of inflating showed at that time, were sound. Prices of most commodities did increase during the latter part of 1947. Although prices of certain agricultural commodities reached a postwar peak in January 1948, the Bureau of Labor's index of wholesale commodity prices receded only a few points and then rose to a postwar peak in August 1948.

A cyclical peak of business activity apparently was reached in November 1948, and the subsequent recession continued until the summer of 1949. (Both the recession and the revival that followed were successfully forecast on the basis of changes in the index of inflating discussed herein.) Instead of permitting deflating, which had become marked in the first quarter of 1949, to continue until the maladjustments of the war and postwar boom were corrected, the Government chose to resume deficit financing. This, together with the easy-money policy resumed by the Federal Reserve System, reversed the deflationary trend. The degree of inflating gradually increased through the remainder of 1949.

Prolonged continuation of the easy-money policy tends to encourage more maladjustments and permits the existing maladjustments to become more deeply rooted. Postponement of the urgently needed deflating will make the Nation's economy increasingly susceptible to a major catastrophe in the years ahead.

SUPPLEMENT, JANUARY 1957

After a minor downturn of business activity in 1954, which approximated in magnitude and duration that of 1949, a renewed upsurge of business occurred. Additional inflating provided the wherewithal, largely by means of the monetizing of private debt in the form of real-estate and consumer loans.

The index of inflating reached an alltime peak of 197 in December 1955.⁵ At this writing (early January 1957), there are some indications that the usual tax-payment deflating in the early months of 1957 will extend the deflating during the past year enough to initiate a general liquidating movement. Already the rising costs of doing

business and narrowing profit margins described by Elihu Root are appearing. We do not know that extensive deflating must occur in the near future, but that the Nation once again has assumed the risk of a severe and prolonged depression seems all too probable.

SUPPLEMENT, JUNE 1959

In the summer of 1957 a downturn in business activity began that exceeded those of the earlier recession periods, 1948-49 and 1953-54. By March 1958 the index of inflating had declined to 167, and by April 1958 industrial production had fallen 12 percent from the cyclical peak. In the late spring of 1958 some recovery was evident, and by September it had accelerated, accompanied by a marked rise in the prices of common stocks. In the absence of cumulative deflating the cyclical readjustment of business activity had been limited primarily to the usual inventory liquidation after a cyclical boom. The inflationary stimulus of deficit spending by the Federal Government at an unprecedented peacetime rate expedited a cyclical recovery that, by the late spring of 1959, was approaching boom proportions. The preliminary index of inflating in June 1959 (the time of this writing) is 190. After some interruptions during the summer a substantial further rise probably will occur.

What does all this imply as to the duration of the present cyclical recovery of business? First, we should guess that it will continue to be overstimulated by inflating later this year; then, especially if the gold outflow continues as it probably will, the recovery may be terminated in a few or several more months by chaotic conditions in the money markets beyond the control of the Federal Reserve Board. Expecting a sound but gradual recovery that will be stable and of long duration does not seem justified at this writing.

SUPPLEMENT, MARCH 1963

In November 1959 we reported: ". . .the present status of the indicators and the critical money-credit situation provide ample warning that a general downturn in business activity may develop within a few months" (*Investment Bulletin*, November 2, 1959). By April 1960 the evidence had become more clear, and our reports were correspondingly more specific as follows: ". . .that a business recession is underway seems certain" (*Investment Bulletin*, April 4, 1960).

In October 1960 the "gold rush" in the London gold market signaled awakening suspicion of U.S. currency, which declined at one time to a discount of 14 percent; that is, nearly \$41 in U.S. currency was required to buy an ounce of gold. In the November 7, 1960, *Investment Bulletin* we reported:

"In short, the basic principles of sound commercial banking have been disregarded by the Nation's bankers and money-credit managers, apparently in the somewhat naive belief that if all the banks participated and, in effect, guaranteed each other against the consequences of such folly, everything would work out all right. The process has continued in spite of the plainest possible warnings that all was not well. These warnings were in the form of increasing foreign claims on U.S. gold and, in the last 3 years, a large outflow of gold from Treasury stocks.

"The process has been carried so far that the banks now are loaded with noncommercial and more or less frozen or nonliquid assets just as they were in 1929 and prior to other major money-credit crises in the Nation's

⁴ General Bulletin, *Monthly Business Review*, January 2, 1939, published by American Institute for Economic Research.

⁵ Subsequent revisions of the index have revealed that it was substantially greater.

history. The principal difference is that in earlier similar circumstances the impact of forced liquidation fell on individual banks with consequent losses of reserves and hundreds, even thousands, of failures; but now the system has been integrated by deposit guarantees and larger holdings of Government bonds in such a way that forced liquidation can be transferred from individual weaker banks to the system and even to the U.S. Treasury. Thus it will be the Treasury that will become, perhaps already is, insolvent in relation to the claims of foreign creditors."

It has been evident for some time that the Administration that took office early in 1961 is just as profligate a spender as its predecessors were. Increasing deficits and a Federal debt mounting to new high levels continue to impair foreign confidence in the dollar, with a continuation of Treasury gold losses flashing warning signals. Fiscal policies intended to stimulate consumer spending and employment still are preferred to measures that would gradually withdraw inflationary purchasing media from circulation (deflate), lower the prices of American goods in world markets, and reverse the upward trend of foreign claims on our gold stock.

SUPPLEMENT, JULY 1970

Presumably, readers of this edition readily will recall the "success" of more inflating during the years after 1963. One consequence was stimulation of a great speculative boom including accentuation of speculative activities in the stock market. Paralleling the great surge in the formation of investment trusts during 1928 and 1929, conglomerates became the vogue in the last half of the 1960's.

Finally, even the Federal Reserve Board became sufficiently alarmed by the consequences of its mistakes to restrain its inflating. By mid-1970, recession appeared to be well under way.

In the period from 1940 to 1968, the United States had repeated on a vastly larger scale all the blunders that occurred from 1917 to 1929. Moreover, by putting aside the discipline of the gold standard, the later period of prolonged inflating was continued longer and fostered maladjustments more serious than those of the earlier period.

Only the fact that much of the rest of the world also was inflating prevented an earlier termination of the process. However, the distortions of the American economy now are so great that a serious recession or depression seems inevitable. One can imagine that prompt resumption of inflating on a large scale *might* reverse the recession now under way; but if that does occur the end result must be even worse than the troubles we now have.

SUPPLEMENT, SEPTEMBER 1974

As our index of inflating shows (Chart VI) prompt resumption of inflating did reverse the recession that began late in 1969. From a low of about 280, after the early 1970 peak of nearly 310, the index of inflating increased to nearly 360 late in 1973.

In the 1970 Supplement, we indicated that such a resumption and extension of inflating would make a bad situation much worse. This has happened to such an extent that the Treasury was forced: (1) to "close the gold window" in August 1971, (2) to devalue the dollar twice within a year, and (3) to abandon all efforts to save the dollar after foisting on the Arabs and the leading nations of the world some \$90 billion of dollars that they, in their folly, accepted thereby stimulating much more inflating in most other nations as well as in the U.S.

By early 1974, all the leading countries were experiencing "double digit inflation" (price rises exceeding 10

percent annually), with no end in sight. Twice within 12 months, major industrial nations were teetering on the brink of a flight from the currencies, i.e., runaway inflation, and the danger of such a development continued to increase.

Money rates reached levels never before witnessed in modern history. A recession seemed to be definitely under way. To one large bank alone the Federal Reserve loaned more than \$1 billion, which equaled the total of such borrowings in 1929 of the 25,000 banks in the U.S. All currencies had fallen drastically in exchange value as reflected in the free-market price of gold.

Yet the dominant economic dogma, the secular revelations of Dr. Keynes, had become so firmly fixed as an article of faith that more inflating was the only remedy offered by Lord Keynes' disciples. The editors of such a respected journal as the London *Economist* clamored for more monetizing of government debt to revive the faltering economy. Even price and wage controls were urged as panaceas, in spite of the evident failure of such controls in the United States. Then President Nixon had proclaimed himself "a Keynesian," and Dr. Arthur Burns, Chairman of the Federal Reserve Board, although he "talked tough," acted differently by providing more Federal Reserve credit when, if ever, less was needed.

Apparently, the madness that has fostered inflating for three decades, that sponsors "paper gold" as something that intelligent men are supposed to consider seriously, that has created distortions disrupting the social fabric of Western civilization, this madness must run its course. Nothing short of a great economic and social disaster seems to be an adequate lesson for these who are guiding economic policy. One does not like to think that the human race, of which one is an inseparable member, deserves that kind of leadership, but that is what it has today.

FINDINGS

1. The extreme prosperity of the late 1920's and that of the 1960's was artificial and unsound. Each was maintained only at the cost of creating maladjustments that would require correction in years to come.

The failure of the 1936-37 recovery to surpass 1929 levels does not imply that the long-term trend of economic development had turned downward. It merely emphasizes the extreme nature of the 1929 boom. Eventually the 1929 level of production and commercial activity was exceeded, but unwise experimentation tended to postpone rather than hasten that time.

2. The extremely low levels of business activity during 1932 and again during early 1938 were abnormal conditions. They reflected the correction of maladjustments. There is no reason to fear that business will stagnate at such low levels unless the mounting burden of taxes and the strait jacket provided by a "planning" government prevent normal progress.

3. The short-term problem of the business cycle is different from the long-term problem that confronts our civilization, which is a distribution of wealth and privilege that threatens the equality of opportunity essential to the preservation of government by the people.

a. One corollary of this conclusion is that we shall probably make little progress with the important long-run problem confronting our civilization until we at least partially solve the short-run problem of the business cycle. This is because the extremes of the business cycle obscure the long-run tendencies that are an integral part of the long-run problem. Too few people are interested in the maldistribution of wealth during prosperity, and during

extreme depressions too many are interested in Utopian schemes that are always brought forward whenever conditions make it possible for their backers to obtain a hearing. Under either of these circumstances, a sane approach and wise handling of the long-run problem are practically impossible.

b. The second corollary is that even a complete solution of the business-cycle problem would not restore a high level of perfect prosperity. It would only alleviate the distressing conditions that have prevailed in periods of depression and would probably direct attention to the long-run problem. However, under such conditions there would be some hope finding a solution.

CONCLUSIONS

If the description presented in this book is useful, if the general summary of developments during the past six decades is accepted in its broad outlines, and if we sincerely desire to progress toward a solution of our economic problems rather than continue chasing the will-o'-the-wisp of an inflationary prosperity, certain obvious conclusions follow:

1. Federal expenditures must be reduced to minimum requirements, in order that there may be a surplus for debt retirement without excessive taxation. Unless this is done, even a beginning will be impossible. As long as the deficit financing continues, the banks must be burdened with more and more Government securities, and continued inflating will continue to disturb the equilibrium of the economic mechanism.⁶

This particular aspect of the problem with which we are immediately faced boils down to whether we choose to act like children or like adults. To the childish mind, trouble postponed means trouble avoided; but most adults have learned to take their medicine and get it over with. The combination of economy in government and deflating will not be pleasant medicine, but the sooner we take it, the sooner it will be over with.

2. The scientific method, which has made possible such great advances in the so-called physical sciences, can be expected to produce equally valuable results in the economic field. Probably few laymen realize that it is being used by some able economists with increasingly hopeful results. As to just how that may be done, the following suggestions may be helpful:

a. The Federal Reserve Board should be an independent, unbiased and nonpolitical agency, capable of directing the scientific investigation of our monetary problems. It is a less partisan body today than it has been at times in the past when it was directly subject to political pressure

⁶ There are certain technical aspects of this problem that must be mentioned for the benefit of those who assert that repayment of debt is deflationary. Readers who have grasped the implications of earlier sections will realize that expansion of the public debt is inflationary only to the extent that the Government bonds purchased by the commercial banking system have exceeded the uninvested savings in the custody of the system. Consequently, repayment of the public debt can involve deflating only to an equal extent. If current savings or, for example, the Social Security taxes absorb the current Treasury deficits in the form of Government bonds, no inflationary credit is created. However, savings used for Government deficits are prevented from following the usual route to the new investment markets. Unless the Government's expenditures are more productive of future benefits than new private investments would be (e.g., unless one prefers a WPA project to a new house), permitting the Government to dissipate the Nation's saving must slowly strangle private enterprise and lower the standard of living, even though no harmful inflating may be involved. Therefore, "balancing" the budget by means of Social Security taxes or other savings may prevent inflating, but such procedure introduces other serious difficulties. The only sensible course is to balance the budget by the usual taxation methods, without juggling the books.

through its chairman. Proposals continue to be made, however, that the degree of independence achieved by the Board in the past decade be abandoned by placing the Board under the direction of a political officer, the President of the United States.

b. Until such time as the Federal Reserve Board or some substitute agency can be expected to function with complete independence, there should be an independent commission composed of the best monetary and business cycle economists that the country has. Men well-known for their ability to apply the scientific method and with long experience in business-cycle and monetary studies are available for service on such a commission. Over a period of years, a commission of this character could provide the guidance that we must have if we are to return to a sound use of our money-credit mechanism.

c. The solution of this problem should not be sought by political and partisan means. Doing something for the Silver States of the West, placating the inflationist sentiment in Congress, and promising more to all those who would feed at the public trough, cannot help in solving the Nation's business-cycle and monetary problems. The politicians themselves, if they only realized it, would be well-advised to place this burden on the shoulders of the best experts that they can find. After all, they want results, and Congressmen can take the credit even if scientists do the work.

3. With reference to monetary policy, certain important conclusions are:

a. That the price level alone is not a safe criterion for those who would control the business cycle.

b. That arbitrarily established bank reserves are likewise not a satisfactory guide for decisions regarding banking policy.

c. That, in general, the commercial-banking tradition, especially as it is exemplified by banking practices in Great Britain during the 19th Century, is at present the best, albeit not yet fully satisfactory, guide to banking policy.

d. That the Index of Inflating presented in this book, especially if further refined by the use of more adequate banking data (not as yet made available), offers at least a clue to sound banking procedure; and, in the light of experience with it during the past few decades, apparently can serve as a useful guide.

4. Finally, there is no quick cure, no new panacea that will open the door to a new Utopia where there will really be a chicken in every pot and two cars in every garage. In this respect also, the economist's position is analogous to that of the physician. Is it not notorious that those who promise to cure our physical ills in a day are usually quacks? Why should we be less suspicious of those who offer, by a miracle of planning or by means of some other panacea, to cure, in a day or a year or even five years, all of our economic ills? Sometimes a physician can assert with assurance that, in a particular case, a reasonably rapid recovery will probably follow from a certain course of treatment; so also in the economic field the economist sometimes is reasonably certain that various major difficulties are blocking the path to recovery. However, even in such instances both the physician and the economist are forced to remember that complications may arise, and they rarely feel free to predict that a rapid recovery is certain. No, there is no doubt about it; we must resign ourselves to the fact that there is no quick cure, especially inasmuch as the rash experiments of recent decades have so greatly complicated the problem. But we can seek out the best followers of scientific method, give them an opportunity to diagnose, and then take the medicine prescribed.

APPENDIX A

A PARTIAL AND TENTATIVE LIST OF ECONOMIC NAMES FOR AVOIDING THE SEMANTIC STUMBLING BLOCKS AND BOOBY TRAPS

A brief example will illustrate one of the semantic difficulties. Some people prefer to use "money" as the name for a medium of final payment that has intrinsic value in addition to its use as a purchasing medium. Yet these same individuals sometimes use the phrase "paper money." In using the word "money," such individuals in the United States ordinarily would be referring to a dollar (1/42.22 of an ounce of pure gold); that is, the referent for money would be a specific quantity of a metal. When such individuals use the phrase, "paper money," they presumably are not intending to talk about paper metal, but that is what they are doing unless they are shifting the referent of the name "money." The subtle and frequently unrealized shifting of the referent makes useful discussion almost impossible.

We should adhere to the rule "one and only one referent" for each name if we hope to avoid the semantic stumbling blocks and booby traps. The following names and descriptions of referents may be helpful.

CHECKING ACCOUNT: A record of a promise by a commercial bank to deliver all or part of a specific amount of purchasing media on the demand of anyone who presents to the bank a check executed by the account owner. Purchasing media in the amount indicated may have been delivered to the bank by the same or some other person, or they may have been created by the bank in the form of a bookkeeping addition to the account as a result of a loan agreement. The total of checking accounts often is referred to as "demand deposits;" however, the latter name misleadingly connotes that purchasing media must have been deposited before they can be demanded.

COMMERCIAL BANKING, SOUND: The process involving the creation of purchasing media, usually in the form of a bookkeeping addition by a bank to the checking account of a processor, for representing things that the processor offers in the markets. The amount of purchasing media thus created approximates the gold-exchange value of the things offered, including gold acquired by the banking system. The processor distributes the newly-created purchasing media usually by writing checks for paying wages, dividends, etc. Such payments represent claims to shares of the things offered due to those who contributed to the processing.

The processor agrees to repay to the bank the borrowed purchasing media plus a fee, after the relatively short period usually required for selling the things. Such repayment ordinarily is effected by a bookkeeping deduction by the bank from the processor's checking account, which account has been augmented by his deposits of purchasing media obtained from the sale of the things that he offered in the markets.

This deduction destroys the purchasing media that were created by the bank, soon after the things that they represented are taken off the market. (The sale of gold by the banking system similarly results in withdrawal of purchasing media that had been created to represent the gold.) The practice of sound commercial banking thus maintains a balance between the amount of purchasing media available for use and the gold-exchange value of

things, including monetary gold, offered in the markets. **COMMERCIAL BANKING, UNSOUND:** The process by which a commercial or Federal Reserve bank creates and makes available purchasing media in excess of the amount needed for representing the gold-exchange value of things, including monetary gold, offered in the markets. This process involves monetizing debt (q.v.) for noncommercial purposes; it accounts for most inflating except that involving monetizing U.S. debt in the form of Treasury currency.

A commercial or Federal Reserve bank can acquire already existing purchasing media by increasing its savings-type liabilities (time or savings deposits plus capital funds of a commercial bank and capital funds of a Federal Reserve bank). Investing or lending such already existing purchasing media for purposes other than representing things being offered in the markets is a proper investment banking function. However, when a commercial or Federal Reserve bank creates purchasing media and invests or lends them for such other purposes, unsound commercial banking and inflating occurs.

CURRENCY: Pieces of paper issued by banks (Federal Reserve banks in the United States) purporting to be claims to dollars' worth of value in the market place. Formerly they included the promise that the United States would redeem them with dollars (q.v.) on demand, but the pledge has not been kept (for United States citizens) since 1933, and the promise has been deleted from new issues of U.S. currency. Foreign central banks and governments formerly could obtain dollars on demand as stated, but United States citizens could not since 1933.

NOTE: For the purpose of this discussion, other currency (United States notes and National Bank notes) and subsidiary coinage may be disregarded.

DEFLATING: The removal by the commercial or Federal Reserve banks or the Treasury of excess purchasing media from circulation. The banks can deflate by selling investment-type assets or by reducing the amount of noncommercial loans outstanding.

DOLLAR: 1/42.22 ounce of pure gold when used as a standard of value, as a store of value, or as a medium of exchange (all or any one of these uses).

INFLATING: The creating by a commercial or Federal Reserve bank or the Treasury of purchasing media in excess of the amount needed for representing monetary gold and the gold-exchange value of things offered in the markets. A general increase in prices often is referred to as "inflation," but this development usually is an indication that inflating has occurred. Most inflating is the result of unsound commercial banking (q.v.).

INVESTMENT-TYPE ASSETS: A bank's holdings of real estate (including its office buildings) and of debt obligations from individuals, businesses, and governments to whom the bank has loaned purchasing media for the purchase of securities or of things for consumption or for use in processing other things. Such obligations include records of debt such as mortgages, personal notes, corporate and municipal bonds, and securities of the Federal Government.

MONETIZING DEBT: Creating purchasing media by a bank, usually by a bookkeeping addition to a checking

account, in exchange for evidence of indebtedness (a bond, note, mortgage, etc.).

Monetizing commercial debt involves creating and lending to processors purchasing media that represent the gold-exchange value of things offered in the markets for the relatively short periods required for selling the things. Monetizing commercial debt is a proper function of a commercial bank.

Monetizing noncommercial debt involves creating purchasing media that do not represent things offered in the markets. Purchasing media thus created are inflationary. For example, when a Federal Reserve bank purchases a Government security without first having obtained an equivalent amount of additional capital funds for investment (i.e., already existing purchasing media), the bank pays for the security by issuing its check payable to the seller, thereby creating inflationary purchasing media and monetizing Federal Government debt. Similarly, when a commercial bank purchases a Government security and issues its check payable to the seller without having obtained an equal amount of additional capital funds, savings or time deposits, or other savings-type liabilities (i.e., already existing purchasing media), it creates inflationary purchasing media and monetizes Federal Government debt.

Similarly, private noncommercial debt is monetized when a commercial bank creates purchasing media for lending on mortgages or buying corporate or other securities whenever the borrower does not simultaneously offer in the markets things having a gold-exchange value equal to the new purchasing media. Like monetizing Federal Government debt, monetizing private noncommercial debt involves failure by the bank to limit additional noncommercial lending and investing to the amount of additional savings-type liabilities that it has obtained.

PURCHASING MEDIA: Currency and coin in circulation plus checking accounts that are immediately available for use in their existing forms (from the viewpoint of purchasers), that are immediately acceptable (from the viewpoint of sellers), and that involve no continuing

obligations after a transaction involving them has occurred.

PURCHASING MEDIA, INACTIVE: Hoarded currency and coin and idle checking accounts that are in excess of the amount ordinarily used to effect business transactions, (i.e., purchasing media accumulated as currency or checking accounts by individuals or others in larger amounts than are usual for their regular business transactions).

PURCHASING MEDIA, INFLATIONARY: Those that do not represent monetary gold or the gold-exchange value of things offered in the markets.

PURCHASING MEDIA, NONINFLATIONARY: Those created ordinarily in the form of a bookkeeping addition to the checking account of the Treasury by a Federal Reserve bank upon receipt of a certificate representing the Treasury's purchase of gold, or a similar addition to the checking account of a business by a commercial bank that represents the gold-exchange value of things offered in the markets.

SAVINGS-TYPE LIABILITIES: Records of purchasing media turned over to a bank by its shareholders (capital accounts) and by savers (time deposits), and other liabilities of the bank except checking accounts and Federal Reserve notes.

TIME DEPOSIT (SAVINGS DEPOSIT): A record of purchasing media that have been deposited in a commercial bank, which the bank usually promptly invests or lends to others for purchasing things for consumption or for use in processing other things. Such a record is not purchasing media (q.v.), but merely indicates the depositor's share of the bank's investment-type assets (q.v.); the record constitutes one of the savings-type liabilities (q.v.) of the bank.

The arrangement between the depositor and bank involves a promise by the latter to sell some investment-type assets, if necessary, in order to deliver a specific amount of purchasing media to the former, not on demand, but after a specified time has elapsed after such a demand is made.

APPENDIX B

A FUNDAMENTAL DIFFERENCE BETWEEN A MEASURE OF VALUE AND A MEASURE OF DISTANCE, WEIGHT, ETC.

Gold is customarily regarded as a standard of value, and specific quantities of gold therefore are referred to as measures of value. For example, the statutory dollar, which is 1/42.22 of an ounce of pure gold, is referred to as the standard unit measuring exchange values in the United States.

In a somewhat similar way, the statutory yard is a measuring unit for distance, the bushel for bulk, the pound for weight, etc. Because there are similarities in the use of all measuring units, analogies sometimes are offered in an attempt to explain values much as the yardstick is used for measuring distances.

Such analogies, although they may be helpful in some respects, also may be dangerous, because they may tend to conceal rather than reveal a fundamental difference between gold as a measure of value and the yardstick as a measure of distance.

Most measuring units are conventional in that they are chosen by men. Consequently, most such units or standards can be altered by men. The yard today is a specified linear distance, but the statutory yard could readily be made half as long. Similarly, the unit of weight called 1 pound could be altered so that it would contain more or less than the presently specified quantity of water at sea level. Also similarly, the statutory dollar could be made a different quantity of gold than it now is.

However, all of these units of measure are fixed by statute, are legal standards, and can be altered only by legislative action. Congress has the power to alter any of them. Of course, there presumably would be protracted discussions of proposals to change any of these standard measures, but in the end Congress could act. Nevertheless, there are important differences in the developments to be expected both during the discussion period and after the adoption of revised standards.

While Congress was debating an alteration in the standard yard, the principal effect would be on those writing contracts in terms of yards and on the makers of yardsticks. Presumably, the former would include clauses protecting both parties against future alterations in the unit of measure, and the latter would prepare to make yardsticks of a different length, a minor modification in manufacturing procedures. No one would attempt to hoard the existing yardsticks, or to hoard space measured in square or cubic yards of the old dimension in the hope that he would profit in any way by the reduction in the length of the yardstick.

On the other hand, while Congress was debating an alteration in the statutory dollar, the effects surely would be striking. They would be especially noteworthy if the decision were made to discard any specific weight of the dollar for a time in order to see what would happen. Almost certainly, those who could do so would attempt

to hoard gold. Only by effectively prohibiting the ownership of gold could individuals be prevented from seeking protection against the Government's actions; but the very denial of the freedom to hoard gold would in itself be a powerful stimulant to black markets where the exchange ratio between paper currency or checking accounts and gold would rise even more than it would in free markets.

In short, serious discussion of alterations in the gold content of the dollar almost certainly would induce a speculative demand for gold. (This is precisely what occurred in January and February 1933, when rumors of Mr. Roosevelt's intentions began to come from credible sources.) Under such circumstances, if a specific unit of value is abandoned and the monetary unit is left to find its level in free markets, the exchange ratios between gold and the monetary unit will reflect primarily the optimism and greed of those who hope to gain and the fears of those who expect to lose by the prospective establishment of a new statutory dollar.

Turning now to consideration of developments *after* an alteration in a statutory standard of measure has been effected, we also find a difference between the measure of value and the measures of distance, space, weight, etc. After a change in the yardstick, for example, to half its former length, the principal effect would be that all distances, immediately after the adoption of the revised standard, would be twice as many yards as they formerly were.

The situation with reference to the measure of value would be decidedly different, however, as we learned in 1934. Some of the more naive of those who advocated devaluation in 1933 expected prices generally to reflect automatically and immediately, or almost immediately, the change in the unit of value measurements. However, their expectations were not realized. Several years elapsed before commodity prices generally reflected the full extent of the 1933-34 devaluation.

Therefore, those who expect that another devaluation of the statutory dollar, say from 1/42.22 to 1/150 ounce of gold, *would immediately or in a short period compensate* for the inflating during recent decades and resulting high prices, are as apt to be disappointed as were the proponents of devaluation in 1933-34. Several years would elapse before all the adjustments to the new unit would be made, and in the meantime there is no assurance that serious deflating would be avoided. If the first reaction to another devaluation is a flight from the dollar such as the scare buying after the Korean War began, we may experience even more inflating than in a few months would result in an even higher level of prices, from which there may be a disastrous nosedive with substantial deflating.

APPENDIX C
ELEMENTS OF AN IDEAL CURRENCY AND
COMMERCIAL BANKING SYSTEM BASED ON A GOLD STANDARD

1. A gold standard.

a. The country's standard monetary unit a fixed amount of gold: a statutory unit of purchasing or exchange media constituting a standard of value and capable of serving as a store of value that consists of a specified weight and fineness of gold.

b. All domestic currency and coin freely exchangeable at face value for gold, which the individual is then free to use as he chooses.

c. No limit on the amount of gold that may be brought to the mint for coinage.

d. Gold full legal tender in payment of all obligations.

e. No restriction on the import or export of gold.

2. A *commercial* banking system.

a. All *demand* liabilities (checking accounts) of the commercial banks to represent either gold or other goods offered in the markets and all such demand liabilities to be payable in the statutory gold units on demand.

b. No demand liabilities (purchasing media) to be

created on the basis of investment-type assets such as mortgages, Government bonds, installment loans, term loans or loans to finance accumulations of excessive or speculative inventories by business. (Note: Once the principles of *commercial* banking are understood, legislation to exclude such loans probably would not be necessary. Of course, such loans would continue to be proper investments for savings.)

3. Both the Government and the commercial banks authorized to issue gold certificates (warehouse receipts for gold).

4. *Only* the commercial banking system authorized to issue currency in the form of bank notes, and such currency to be redeemable on demand.

5. *Only* the Government authorized to issue small domination coins and to coin gold.

6. Interest rates to be determined at *all* times by *free* markets.

7. Government deficits, if any (in war and in peace), to be financed by bona fide savings from current incomes.

APPENDIX D

THE DREAM WORLD OF INFLATING AND THE ACCOUNTANT'S NIGHTMARE

The euphoria characteristic of most individuals during the early and middle stages of prolonged inflating is beginning to be superseded by some understanding, on the part of a small minority thus far, that the currencies of Western civilization rapidly are depreciating. Many people are awakening to the reality that a dollar no longer is a dollar as they once knew it but is a mere piece of paper having no definite real exchange value. The same is true of the other principal currencies.

Citizens of the United States have lost more than \$1,000,000,000,000 (a trillion dollars) in the buying power of their savings and life insurance since the beginning of World War II. Citizens of most other nations have lost less in total amount but even more in proportion to their relatively smaller per capita savings and life insurance.

Pensions throughout all of Western civilization have become like a mirage in the desert. They dwindle and lose their capacity to support life as the working individual nears his retirement years.

Accountants, who might have been expected to see the departure from financial reality earliest, only recently have become concerned. In both the United States and Great Britain the professional accountants societies are striving to devise some means of keeping fiscal records that will provide an adequate measure of what really happens over various periods of time. The fact that much accounting has become meaningless fiction finally is being recognized.

However, while the professionals try to devise formulas for converting dreams into reality, the situation becomes worse, day by day. Floating exchange rates have resulted in greater and more abrupt fluctuations among the various currencies in relation to each other; and competitive devaluations have brought the depreciation of most leading currencies to the two-digit stage with fluctuating rates of decline in excess of 10 percent annually and a disturbing tendency to increase the rate.

The accounting for any corporation, even within one nation, if it uses substantial capital to be depreciated over long periods or has long-term obligations to pension funds etc., has become widely separated from reality. As for the great multinational corporations including major world banks, insurance companies, airlines, and others, their financial records have become an accountant's nightmare. A profit in one currency may or may not be a profit in another currency that must be used to some extent. By the time managerial decisions on price changes etc. can be made, fluctuating foreign exchange rates have made a mockery of the accounting basis for the decision.

Now it becomes increasingly clear that rotting paper currencies are not practicable financial and accounting media for a modern industrial society. Unfortunately, also more clear every day is the fact that the world's politicians and central bankers will do little or nothing to remedy the situation. In order to understand how the present state of affairs has developed, a brief historical digression is needed.

The Facts, as Developed to Date

In the last part of the 1800's and until World War I (1914), all of the leading industrial nations as well as

many others used a common international monetary base. All of their currency units were gold, although some used different weights of gold than others did, and various names were used for the different unit weights, such as "dollar," "pound," "franc," "mark," etc.

Because each currency unit was gold, each was readily exchangeable into any other, based on the relative gold contents. In practical effect, troy ounces of gold, or in the metric system grams of gold, were the international unit for all currencies of leading nations.

This situation represented the peak of development for Western civilization in monetary matters. It facilitated commerce and made possible long-term accounting records that were meaningful rather than fictitious. Not only commerce between nations but also the great increase of useful capital was encouraged by the growth of savings institutions, life insurance, and pension funds.

During World War I, the countries concerned inflated by printing paper money and monetizing Government debt not limited by any relation to the gold currency unit. The results were catastrophic:

a. In Germany, the money became worthless in 1923, with complete loss of all savings, life insurance, pensions, and an economic breakdown with serious depression. A new gold monetary unit was adopted. In some other countries the experience was similar.

b. In France, the loss of buying power of the currency was not so extreme as in Germany, but the French franc, by the time of DeGaulle, would buy less than one two-hundredth of what it bought in 1914.

c. In England, the pound sterling lost much of its buying power, but an effort was made in 1925 to restore the pre-war gold currency unit.

d. In the United States, the consequences were less serious, although a noticeable loss in the buying power of the dollar occurred.

Between World War I and World War II, an effort was made to restore the pre-World War I situation. However, the procedure adopted facilitated inflating again as some currencies, especially the dollar and the pound, were widely used as reserves in other countries as though they were gold. The inflationary boom of the 1920's was the immediate result, and the Great Depression of the 1930's was the aftermath.

During World War II, the inflating procedures used during World War I were again applied, with similarly disastrous consequences for many nations.

After World War II, the leading nations joined in establishing a new international monetary system based on gold. However, once again they repeated the mistake of the 1920's by providing that the currencies of some nations could be held instead of gold as the reserves of other nations. In practical effect, this meant counting gold twice, once where it actually was held and again in some other countries whose central banks held claims on dollars, pounds, etc.

In the decades after World War I, the basic principle of sound commercial banking was so far departed from that it was largely forgotten. This principle is that all money in circulation should represent either things being offered in a nation's market or gold held in the banks but also offered in the markets because anyone who had paper

currency or a checking account (demand deposits) could claim gold from a bank just as he could claim things in the markets with his money. When there is sound commercial banking, the currency plus checking accounts are in practical effect, simply claim checks that can be used to acquire things in the markets (including the gold in the banks, which in practical effect is always being offered to whoever desires to give other money for it).

Also, during the 1930's, the years of the Great Depression, the economic notions of John Maynard Keynes became widely accepted as the remedy for depression difficulties. The new economic ideas (actually very old, but new to many ignorant of history) became virtually an economic "religion" with fanatic followers in all the leading universities of Western civilization.

To summarize, the new ideas involved perpetual inflating as a means of achieving perpetual prosperity. Dr. Keynes' ideas were embodied in the charter of the International Monetary Fund, created in 1945-46. It became, as was intended, a great engine of inflation, and thus functioned for nearly three decades.

In recent years, the consequences of continued inflating have become increasingly apparent. All the currencies of Western civilization are depreciating (losing buying power) now more rapidly than earlier. All are tending to become worth less and less with no end in sight.

Consequences of Inflating

The international monetary turmoil with the succession of crises, each more serious than the one preceding, is one consequence of the prolonged inflating. Other consequences are the increasing economic distortions, the loss of value relationships, the necessity for even school teachers to organize in unions in order to fight for their living standards, etc. As always in the many centuries of recorded human experience, inflating is the great destroyer of organized society.

Now an advanced stage of the process has been reached. No one can predict the precise timing, but serious economic breakdown, a great and probably prolonged depression is ahead at some point in the perhaps not distant future.

Eventually, if Western civilization is not to decline as did that of Rome and many others in the past, the nations of Western civilization must return to sound money. A modern industrial society cannot be maintained without a sound accounting unit with which to calculate long-term depreciation schedules for business and long-term contracts of all kinds, and to record savings, life insurance, and pension funds in real rather than fictitious values. The tremendous capital investments required for a modern industrial society cannot be maintained, replaced, and enlarged without correct instead of erroneous or false accounting. Accounting in terms of paper units has become a fiction incapable of providing the information

essential to the operation of large-scale and long-lasting enterprises.

A Useful Accounting Unit

Of all the possible accounting units that men have used, gold has proven to be by far the best. This fact is becoming increasingly obvious and is recognized by more and more people and businesses who are attempting to survive the difficult years, perhaps decades, ahead.

Inasmuch as most modern industrial nations now use or soon will use the metric system, grams of gold instead of troy ounces probably will be the international currency unit of the future. We use the name "MAU" for one gram of gold in an alloy 0.999 fine (possibly 0.995 will become the standard instead of 0.999). The M is for metric and the AU is the chemical symbol for gold. As in the past, various nations may give different names to the gold unit they finally adopt, but there is no practicable alternative to using gold as the international currency unit.

Already, some accounting is being done in terms of MAU, with MAUEX being the exchange value of MAU in terms of any paper currency as may be indicated such as MAUEX \$, or MAUEX S.Fr, or MAUEX £ etc.

That there is little hope for constructive action by any government in the foreseeable future has been emphasized. Perhaps, after a great depression a few or many years hence, the public will have learned the obvious lessons and will insist that sound money be restored. Or perhaps, as has happened so many times before, inflating will destroy social order, and dictatorships of the right and the left, depending on the country concerned, will replace existing governments, in practical effect if not in form.

In any event, those who would survive financially during the years ahead, both individuals and businesses, need not depend on governments and central banks to save them. They can start to keep their accounts in MAU and thereby avoid diverging too far from reality. If enough individuals and businesses choose this route to survival, they may well create a de facto monetary system that will supersede the pathetic monstrosity known as the International Monetary Fund and the leading central banks. By repeating in a shorter period the evolutionary progression that led via the merchant goldsmiths to modern commercial banking, those who thus put their own accounting in order may survive and hasten the restoration of a practicable system of exchanges appropriate to a modern industrial civilization.

Supplementary Note: If there are flights from the currencies in major industrial nations, extremely great fluctuations in the "price" of gold in the various currencies probably will occur. These may complicate short-run accounting problems, but any such difficulties will be more than compensated for by the long-run advantages of what may be called accounting realism.

APPENDIX E

THE LOST ART OF COMMERCIAL BANKING

The evolutionary development of human culture extended over millions of years. The written record of what has occurred is relatively short, but we know not only from the written record but also from the artifacts of earlier human societies that men acquired various arts or special skills only to lose them in subsequent centuries.

Perhaps in most instances loss of acquired arts was not a determining influence in the retrogressions, the decline and fall of an unknown number of civilizations. However, in the present century an art has been lost or nearly lost, and the consequences may have a significant influence on the breakdown of Western civilization. This now nearly lost art is the art of commercial banking.

As has been true for many developments in human culture, commercial banking evolved as men attempted to cope with their problems, in particular the exchange problems encountered in a world of rapidly increasing production, one result of the industrial revolution. From one point of view, the development of modern science and its technological application to production, forced the more or less parallel development of commercial banking. Although more and more men learned the procedures of scientific inquiry that enabled them to create the amazingly productive modern industrial society, they never did apply similarly scientific methods of inquiry to the problem of effecting the tremendously augmented number of exchanges that characterized mass production for mass markets. Commercial banking evolved as an art by a succession of trials and errors just as many other human arts have developed rather than as an outcome of scientific inquiry.

Eventually the developing art of commercial banking was crudely described and in some degree understood by its practitioners. For about a hundred years it was sustained at an advanced level of development before retrogression began. More will be reported subsequently about aspects of the retrogression; at this point we simply mention that almost no bankers and few money-credit economists today are familiar with significant aspects of this lost art. Even the most ardent advocates of sound money, of the gold standard, of a useful accounting unit seem not to realize that until the lost art of commercial banking is revived and generally applied there can be no hope for the money-credit system of Western civilization.

Throughout the civilized world, inflating has become the great destroyer. The signs of pervasive economic distortions leading to social disorder and retrogression are clearly evident. Some economists seem to believe that restoration of the gold standard or some other panacea could remedy the situation. However, a return to the gold standard or any other attempt to stabilize money-credit systems would be short-lived and self-defeating without application of the lost art of commercial banking.

No doubt, other lost arts that once flourished seemed durable and assured of perpetuity by those who practised them. But the fact is that arts once lost have not readily been recovered, even when to the earlier practitioners the arts had seemed so easily understood, so readily discoverable, that little trouble was taken to perpetuate them.

In attempting to describe the lost art of commercial banking we have at least two ways of proceeding. One would be to explore the evolutionary development, describe the failures and the successes, and thus finally

exhibit the art as practised for nearly a century. A second way of proceeding would be to describe what objective was achieved by sound commercial banking and list in detail various aspects of the useful procedures. For the purpose of this article, the second way of proceeding has been chosen.

The Problem That Was Solved By Commercial Banking

Medieval markets were like those existing today in the more primitive societies. Things were produced on a small scale, were brought to the public markets by the producers or their families or friends, and exchanges were effected by barter in large part. Even in those early markets where money was used, the money frequently was gold or silver coin, and the transactions more nearly resembled primitive barter than the modern banking and exchange procedures now widely used.

However, as the industrial revolution developed through the eighteenth and nineteenth centuries, mass production for mass markets became common place. The flow of things to organized and continuous markets became thousands of times the physical volume of things exchanged earlier. Today, as anyone who has observed modern shopping centers, supermarkets, major discount houses, and department stores can see for himself, the problem of facilitating exchanges has become enormous compared with the exchange problems of a village market centuries ago.

Today's problem may be summarized as follows:

a. Coming to the markets of any country such as the United States is a vast flow of merchandise, transported in ships, freight cars, trucks, and airplanes, a flow continuously in movement day and night (with intermissions for parts of the flow at times).

b. Millions of individuals and businesses obtain varying portions of this flow, for consumption or perhaps for facilitating the production of other things.

c. Clearly, one basic problem that must be solved, if the flow is to continue uninterrupted and without either accumulations of surpluses or serious scarcities in the markets, is to provide for potential claimants or buyers the claim checks or purchasing media that will enable them continuously to buy what is offered. Enough, but neither an excess nor a deficiency of claim checks, must be provided.

If you were suddenly confronted with such a problem, and had no experience with modern financial and exchange procedures, had never handled what you think of as money, the problem might well seem extraordinarily difficult. Remember that innumerable items flow into the markets: gold ingots from South Africa, manufactured watches, silver in many shapes and forms, diamonds and other precious gems, food in infinite variety from raw material to precooked TV dinners, fabrics and clothing also of seemingly unlimited variety, millions of automobiles, all kinds of chemicals, medicines, household appliances, etc.

Also, remember that practically all of the buyers in the markets have, in some manner or another, participated in the processing efforts that have resulted in this vast flow of things. Each is entitled to his share: this man has fitted the wheels on each of thousands of cars; that woman has sewn the seams of hundreds of suits; this manager has

coordinated the efforts of a few hundred thousand people engaged in processing a flow of tires to market; another man has loaned his savings to a company that provides electricity for all to use; still another, a barber, has just performed a service for Tom Jones and has received from him some of the claim checks earned by Tom during the past week, so that, although a barber sends no things to market, he also obtains the means to buy.

Let us suppose that your problem is to provide for all the potential sharers in the flow of things some means of claiming their shares in the markets. We shall not suggest that you stumble down all the blind alleys where men were frustrated in trying to solve this problem during the long evolutionary development of useful commercial banking. Instead we provide a summary description of the most advanced, most efficient stage of development that was reached in the decades before World War I.

We chose that stage of development because retrogression began with World War I as will be described in more detail later.

How a Useful Money-Credit System Functioned

One of the obvious requirements for solving the problem as described is an accounting unit in terms of which the exchange values of all things in the markets can be determined. Clearly, claim checks valid in the markets for purchasing things being offered for sale must be denominated in some unit of measure for exchange values. Thus, the claim checks can be anonymous and available for general use in claiming (buying) any thing. Unlike the situation in a baggage check room, those who wish to claim things offered in the markets want their claim checks to be valid for any item available, rather than valid for claiming only one thing. The buyer in a market wishes to claim the number of units of exchange value to which he is entitled rather than the specific items that he may have participated in producing or in bringing to the market.

Nevertheless, the market situation is in some respects like that in a baggage checkroom. If claim checks for baggage were counterfeited, or in some way were issued when baggage had not actually been left in the checkroom, people could be trying to claim more baggage than there was baggage to claim. Conversely, if baggage checks that had been issued properly as baggage was received were either lost or destroyed, some baggage eventually would remain unclaimed in a checkroom.

Similarly in a nation's markets, if the claim checks (or purchasing media, or "money") were counterfeited or in some other ways amounts were issued to potential buyers in excess of the amounts required to represent values of things in the markets, buyers would have far more to spend than the usual market prices of things for sale. In trying to use their excessive purchasing media, buyers would bid for relatively scarce goods, and prices would rise.

In the reverse situation, that is, if claim checks (purchasing media) were not issued in sufficient amount to represent the values of things being offered in the markets at the usual prices, prospective buyers would not be able to claim all the things offered. Then merchants would be forced to reduce prices in order to sell their stocks of things before the continuing flow of goods to market exceeded the capacity of their storerooms.

The accounting unit finally chosen by all leading industrial nations was a specified amount of gold by weight and degree of purity. In some instances, different weights of gold were designated as the accounting unit,

and various names were applied by the different nations to the weights of gold they selected, such as dollars, francs, pounds, etc. Nevertheless, because all the accounting units were gold all were freely exchangeable with one another in the simple proportions of their relative weights of gold.

While these conditions prevailed, any specific number of the accounting units designated so much gold by weight. One had no need to talk about a "price" of gold in terms of the various currencies, any more than one would discuss the "price" of a bushel of potatoes in terms of potatoes. One might talk about the weight of a bushel of potatoes as being 60 pounds of potatoes; and in similar fashion one might talk about 100 dollars as being a specified amount of gold by weight, because a dollar by statutory definition was approximately one-twentieth of an ounce of gold in an alloy nine-tenths fine.

The fact that gold was the accounting unit chosen explains neither how that choice came to be made nor how it facilitated the issue of claims for things in the markets. As for how the choice happened to be made, we shall comment here only briefly.

As human culture evolved, men discovered the usefulness of gold as an exchange medium. This was not a scientific discovery in the usual sense involving laboratory experiments and analyses; it simply was the result of unplanned experience. Men discovered the durability of gold, which neither rots nor rusts; its comparative scarcity; the fact that its exchange value for other things (or rather for the average of other things over wide areas and prolonged times) was relatively stable, as compared with the relative exchange value of anything else; even its pleasing appearance to men and women; its easy divisibility; and possibly other attributes may have been taken into consideration.

At this point we are focussing attention on some of the facts and are not attempting to describe how those facts came to exist. These are aspects of the entire problem that need not concern us here, however interesting they may be to students of economic history. The fact is that gold was the unit of account for modern industrial civilization.

We turn now to a description of the commercial banking procedure that issued claim checks representing things in the markets, retired those claim checks from circulation as things in the markets were sold, and issued new claim checks to represent the new things coming into the markets. These procedures had to occur in order to facilitate the huge volume of exchanges essential to the orderly functioning of a modern industrial society.

At this point, one must first realize that gold held in the banking system was one of the things continually offered in a nation's markets. As gold was brought to the banks, paper currency was issued to represent it, or additions to individual checking accounts were made to represent the gold; i.e., to the account of the man who deposited gold was added, by a bookkeeping entry, the appropriate number of gold accounting units (in the United States, dollars). These purchasing media, i.e., currency or checking accounts, could be used by the holders at any time to claim gold from the banks, that is, to buy the gold in that segment of the nation's markets.

The commercial banks also created claim checks (purchasing media consisting of currency and checking accounts or demand deposits) representing things being shipped to and offered in the nation's markets. The procedure formerly more widely used is somewhat easier to understand.

As a manufacturer shipped completed things to market, he would prepare a document describing the shipment, take it to his bank, and borrow purchasing media that, in practical effect, represented the things en route to market. The bank made the loan by crediting an appropriate amount to the checking account of the manufacturer, but this amount was *not* deducted from other checking account liabilities of the bank. Thus, new purchasing media were created and were placed in circulation when the manufacturer used the addition to his checking account to pay wages, salaries, suppliers, and other costs of processing the things sent to market. (As the things were sold, the receipts from sales were used to repay the bank loan by having the amount deducted from the manufacturer's account. Thus the purchasing media created for temporary use were withdrawn when their purpose had been served.)

Those who received the newly issued purchasing media from the manufacturer then could choose whatever they wanted that the markets offered. Also demanding things in the markets were those individuals who had purchasing media representing gold in the banks. Everyone who had purchasing media at his disposal could buy anything he chose in the markets including the gold continually being offered by the banks as one segment of the entire market.

At all times some individuals and some businesses desire to retain all or part of their available purchasing media for near-future use. Tom Jones, for example, prefers not to buy ordinary merchandise today but plans to buy tomorrow or next week. Therefore, he claims gold at the bank intending to hold it until later when he can use it directly to buy other merchandise; or he may redeposit it and use the currency or checking account that he thus obtains to buy later in other segments of the market. Also, he may simply hoard currency or leave his checking account inactive while Dick Smith who has an equal amount of purchasing media representing gold uses his currency or checking account to buy merchandise today. The result is the same as though Tom Jones had said to Dick Smith, "Let me have your purchasing media representing gold in exchange for my purchasing media representing other merchandise, so that you can buy general merchandise other than gold today and I can wait until tomorrow (or next week)." However, because all the purchasing media used is free of any tie to a particular product, such a conversation is unnecessary. The result is obtained without any need for Tom Jones to find and agree with Dick Smith.

A brief digression is necessary at this point, because the procedure described above has been modified in recent decades as mass production has developed on a broader scale and now occurs almost continuously throughout the year. For example, automobile manufacturers ship cars to market practically every business day except for the few weeks each summer when plants are closed for the changeover to new models. Preparing new sets of documents nearly every day for all shipments for use as a basis for bank credits would be unnecessarily time consuming. Consequently, a different procedure has been developed.

The automobile manufacturer arranges with commercial banks for a "line of credit" and gives a promissory note that may be paid off only once each year during the model changeover period when no cars are en route to markets. Thus a series of borrowings continually being repaid as cars are sold is replaced by a single borrowing resulting in the creation of purchasing media that remain in circulation as long as the flow of cars to markets

continues. Instead of using the receipts from today's sales of cars to pay off the note secured by the bill of lading for the shipment, the receipts from today's sales are used by the manufacturer to finance his next shipment. (Whether the time intervals involved are daily, weekly, or monthly depends in part on customary timing for the payment of wages, salaries, dividends, bills for materials, etc.)

Clearly, the art of commercial banking requires knowledge about many aspects of production and exchange. The banker must be an expert judge of financial statements and must know the customary production and shipping procedures of those for whom he creates new purchasing media by discounting their notes. He also needs to have some knowledge of market prices, although much of this information is available in the records of billings by the processors of things being sent to or in the markets.

The commercial banker must have some basis for judging prices. Inasmuch as gold by weight is the accounting unit, when the gold standard is in general use as it was before World War I, prices of all things except gold are quoted in terms of gold. For example, at that time, "dollar" was simply another and shorter name for about one-twentieth of an ounce of pure gold in an alloy nine-tenths fine. (Probably human beings are the only form of life on earth that can be persuaded to believe that a name such as "dollar," after having been irrevocably severed from reality so that no longer is it a name for any tangible thing, nevertheless can be used as though it still named something in the real world.)

Potential Errors in Judgment

From the summary description given above, one can realize that possible errors by commercial bankers in judging the prices of things that are represented by new credits, by newly created purchasing media, could have disturbing repercussions. If, because of overoptimism about prices generally, the bankers created so much new purchasing media that prices in the United States increased in relation to prices for similar things elsewhere in the world, some potential buyers would buy in foreign markets. In that event, the banks would have had to send gold abroad, because a foreign holder of U.S. purchasing media (or of claims on it) would buy the relatively cheapest thing available in U.S. markets, which would at that time be gold.

The outflow of gold would reduce the purchasing media in the United States representing gold and thus would reduce somewhat demand for other things. Prices of most things would fall and the commercial bankers' error attributable to overoptimism perforce would be corrected. A cumulative distortion attributable to errors of overoptimism would seem to be highly improbable provided the basic principle of sound commercial banking were followed.

However, other major errors of a different type have occurred, of such nature as to create increasingly greater distortions leading to periodic breakdowns of the money-credit system. How these errors occurred will now be described.

Savings and Investment

As commercial banking has developed, especially in the United States, two quite different functions have been performed by the same institutions. In addition to commercial banking as already described, most banks also accept savings to be invested.

Savings are purchasing media that the original holder decides not to spend himself but instead requests the bank to invest for him and pay him interest on his savings account, sometimes called a time deposit. The bank invests such purchasing media by lending it to a borrower who perhaps is buying equipment for his factory or to a borrower who may desire to buy a new car or for some other purchase. Thus, the purchasing media (currency or checking account) are used by someone to buy things in the markets although the original recipient of those purchasing media chose not to buy but to save. He acquires a credit to his savings account or time deposit, which shows that he is the owner, indirectly, of whatever investments the bank has selected, such as bonds, mortgages, installment loans, etc.

The borrower from the bank in the savings-investment transaction is *not* at that time sending to or otherwise offering things of equal value in the markets to be sold. He does *not* desire purchasing media so that he may distribute it to employees and suppliers who participated in preparing things for the markets. His desire is to claim things *from* the markets, either equipment for his factory, or a new car for personal use, or any of the multitudes of other things available, such as new bricks for construction of a factory, etc. Consequently, the bank should not create new purchasing media for such a borrower but should lend him purchasing media already in existence that some present owner or owners save and deposit in the bank.

Probably because the same banks have been performing two functions, each of which involves lender-borrower transactions and similar, often identical forms (such as promissory notes) and related procedures, many bankers have confused the two functions. Extreme examples were numerous in the late 1700's and early 1800's.

In the United States the so-called "wildcat banks," usually small institutions in more or less remote areas, so inextricably confused their two primary functions that they not only created new deposits (by discounting notes and crediting the proceeds to checking accounts) for typical commercial purposes but also they followed the same procedure and created new checking accounts when discounting mortgage notes. In the first type of procedure, the new purchasing media created represented the exchange value of things en route to or being offered for sale in the local markets, but in the second the new purchasing media represented things (such as land, factories, or consumer goods) not being offered by the borrowers for sale but on the contrary being removed by them from the markets.

Perhaps the most easily confused examples of commercial vs. noncommercial banking are provided by the financing of automobiles in or en route to markets in contrast with consumer installment borrowing to purchase a new car. The important distinction that makes all the difference between sound and unsound commercial banking is:

a. When an automobile manufacturer borrows newly created purchasing media and distributes them among employees, suppliers, and others, he is arranging for those potential buyers to obtain their shares in dollar value, of things in or en route to markets.

b. When an installment buyer arranges to purchase a car, he is *not* claiming a share corresponding to his participation in producing things for markets, he is claiming someone else's share. James Brown can properly do that provided John Doe is willing to lend to James Brown the share that Doe's purchasing media (currency or

checking account) prove he is entitled to claim. Such an arrangement usually is effected via the savings-investment procedures with a bank as intermediary. If the bank creates new purchasing media for James Brown to use instead of arranging a loan from John Doe or others, the result will be more purchasing media available to potential buyers than the corresponding value of things in or en route to markets.

c. Thus, one can see that a bank's lending transaction may reflect additional things offered in the markets *or it may not*. If it does, creation of new purchasing media (for use until retired by repayment of the loan by the seller) is sound commercial banking. If the lending transaction does *not* reflect *additional* offerings in the markets, it should be financed by the savings-investment procedures.

When the borrowers from "wildcat banks" attempted to buy, they discovered that merchandise was scarce; they bid prices higher and higher for the available things. Soon, those having purchasing media tried to buy more cheaply in foreign or at least more distant markets. The sellers in those markets did not wish to buy most things in the local markets but used their claims to demand gold from the "wildcat banks," which then were unable to meet their obligations and collapsed.

This disastrous syndrome has been repeated again and again in human experience. Another notorious instance was that of the Scottish banks, of which a multitude collapsed after similarly neglecting to apply what might be called the basic principle of sound commercial banking.

Finally, the lesson was learned. For nearly a century prior to World War I, the leading English banks applied the basic principle of sound commercial banking most of the time with outstanding success. The basic principle became more widely understood and applied among industrial nations. Even the United States, which had been one of the "slow learners," did embody this basic principle in the legislation that initiated the Federal Reserve System in 1913. The Federal Reserve banks originally were permitted to rediscount for the member banks only commercial paper directly tied to the volume and value of things flowing to markets. Such widespread application of the basic principle of sound commercial banking marked the farthest advance achieved by the human race in the evolutionary development of a money-credit system that could serve a modern industrial society.

During World War I the prolonged evolutionary development ended, and retrogression began that has continued to date. Perhaps the decisive influence was the political decision by each leading combatant to finance the war by inflating. This procedure was not justifiable on economic grounds (as Napoleon had demonstrated a century earlier), but apparently it was politically expedient. The basic principle of sound commercial banking was simply disregarded when the governments used the various banking systems as means of monetizing government debt. Not only the central banks but also the commercial banks generally were stuffed with government paper (promissory notes of short and long duration, the latter called bonds), in exchange for credits to the checking accounts of governments. What happened then and since is summarized below.

Developments During Recent Decades

In the last part of the 1800's and until World War I (1914), all of the leading industrial nations of the world

and many others used a common international monetary base. All of their currency units were gold, although some used different weights of gold than others did, and various names were used for the different unit weights, such as "dollar," "pound," "franc," "mark," etc.

Because each currency unit was gold, each was readily exchangeable into any other, based on the relative gold contents of the unit. In practical effect, troy ounces of gold, or in the metric system grams of gold, were the international unit for all currencies of leading nations.

This situation, which included the advanced stage of commercial banking already described, represented the peak of development for Western civilization in monetary matters. It facilitated commerce and made possible long-term accounting records that were meaningful rather than fictitious. Not only commerce between nations but also the great increase of useful capital was encouraged by the growth of savings institutions, life insurance, and pension funds.

During World War I, the nations concerned inflated by printing paper money and monetizing government debt unrestrained or not limited by any relation to the gold currency unit. The results were catastrophic:

a. In Germany, the money became worthless in 1923, with complete loss of savings, life insurance, pensions, and an economic breakdown with serious depression. A new gold monetary unit was adopted. In some other countries the experience was similar.

b. In France, the loss of buying power of the currency was not so extreme as in Germany; but the French franc, by the time De Gaulle became president in 1958, would buy less than one two-hundredth of what it bought in 1914.

c. In Great Britain the pound sterling lost much of its buying power, but an effort was made in 1925 to restore the prewar gold currency unit.

d. In the United States the consequences were less serious, although a noticeable loss in the buying power of the dollar occurred.

Between World War I and World War II, an effort was made to restore the pre-World War I monetary situation. However, the procedure adopted facilitated inflating again as some currencies, especially the dollar and the pound, were widely used as reserves in other countries as though they were gold. The basic principle of sound commercial banking was disregarded; and the inflationary boom of the 1920's was the immediate result followed by the Great Depression of the 1930's.

During World War II, the inflating procedures used during World War I again were applied, with similarly disastrous consequences for many nations.

After World War II the leading nations joined in establishing a new international monetary system based on gold. However, once again they repeated the mistake of the 1920's by providing that the currencies of some nations could be held instead of gold as the reserves of other nations. In practical effect, this meant counting gold twice, once where it actually was held and again in some other countries whose central banks held claims on dollars, pounds, etc.

In the decades after World War I, the basic principle of sound commercial banking was so far departed from that it was largely forgotten. Also, during the 1930's, the years of the Great Depression, the economic notions of John Maynard Keynes became widely accepted as the remedy for depression difficulties. The "new" economic ideas (actually very old, but new to many ignorant of history) became virtually a new economic "religion" with fanatic

followers in all the leading universities of Western civilization.

To summarize, the new ideas involved perpetual inflating as a means of achieving perpetual prosperity. Dr. Keynes' ideas were embodied in the charter of the International Monetary Fund, created in 1945-46. As was intended, it became a great engine of inflation, and thus functioned for nearly three decades.

The Situation Now Existing

The results of forgetting the art of sound commercial banking, of accepting almost universally the Keynesian secular revelations, and of adopting perpetual inflating as not-to-be-questioned government policy are becoming increasingly apparent and increasingly unpleasant. That the economic distortions created are disrupting social order hardly will be questioned by anyone who has even a glimmer of understanding of the news behind the news. Andrew Dickson White reported on inflation in France in the late 1700's, commenting that all the worst characteristics found in human nature, avaricious embezzling, reckless speculation, betrayal of trust, and the like, grew like "fungus on a muck heap." When one observes what has gone on in high corporate finance, in banking, in government during recent years, one is impressed with the extreme fertility of the Western civilization "dung heap." Most prominent today are not the characteristics of a lasting social order; at least one hopes that these characteristics will not last. Unfortunately, however, present indications are that developments will be worse, much worse, before there is a lasting turn for the better.

Consider, for example, the 1973 meeting of the International Monetary Fund in Nairobi. Several hundred of the world's leading bankers, government financial personnel, and economists solemnly met for a few days. With straight faces they discussed Special Drawing Rights, the so-called "paper gold." Not a man stood on his feet and declared, "Gentlemen, we are laboring under the delusion that imposing names must apply to something, but there is no reality to which the name 'paper gold' can be applied. The fruitless efforts of our Group of Twenty should be enough to convince anyone. We are not so much making fools of ourselves as exhibiting the fact that we are an aggregation of monetary novices. Those of us in banking are mere pawnbrokers in marble halls, most of whom never learned the art of commercial banking or even know that there once was such an art. With the aid of ignorance, cupidity, and expediency on the part of our friends in governments, we are destroying a civilization. Let us stop and try to learn from the lessons of the past."

Now the point of this imagined comment is not to castigate the world's bankers and politicians, however well they may merit such castigation. The point is that no single man in banking or in government and no group of men is urging the desirability of leaving the world of dreams and returning to reality. The inescapable conclusion is that there is little or no reason to hope that inflating and the resulting destruction of social order will be stopped short of terrible disaster.

Even the advocates of a return to the gold standard do not provide good reason to hope that a turn for the better can be achieved. Almost none of them understands that application of the basic principle of sound commercial banking is essential to make the gold standard, or for that matter any other monetary standard, useful in the long run.

Among the gold standard advocates are found the

100-percent-reserve proponents who would restrict the purchasing media in use to gold and perhaps silver coins or paper currency and to checking accounts directly representing these. They would go back to medieval times before the earliest beginnings of sound commercial banking. How they would cope with the flood of products to be marketed in a modern industrial civilization they do not suggest, nor do they seem to realize that a problem might exist.

Others among the gold-standard advocates offer a simplistic solution, raising the "price" of gold and restoring convertibility of currencies to gold. They seem not to realize that a huge volume of inflationary purchasing media exists and is polluting the money supplies of the world just as would multiple billions of counterfeit currency. Few add to this simplistic solution a proposal for removing excess purchasing media from

circulation (deflating) and thereafter prudently applying the basic principle of sound commercial banking.

An art that mankind once acquired has been lost. This assertion does not imply that the art in question had been developed to perfection. Wise men do not hope to achieve perfection; they aim at solutions that work passably well in the real world and try to improve upon them, more nearly to perfect the application of basic principles discovered, and to preserve the best of what already has been achieved while striving to achieve even better results. Until the art of commercial banking becomes a science, and like most of man's studies of human behavior that is a long way in the future, can we do better than revive the lost, but not entirely forgotten, procedures that once worked so relatively well, in contrast with the international monetary muddle we have today?

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