

Dhananjayrao Gadgil Library



GIPE-PUNE-014096

QUALITATIVE CREDIT CONTROL

BY

WILLIAM E. DUNKMAN, M. S.

*Assistant Professor of Economics
The University of Rochester*

SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS

FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

IN THE

FACULTY OF POLITICAL SCIENCE

COLUMBIA UNIVERSITY

no. 395 in the "Studies in History, Economics and
Public Law" of Columbia University.

NEW YORK

1933

X6:75
G3
14096

COPYRIGHT, 1933

BY

COLUMBIA UNIVERSITY PRESS

PRINTED IN THE UNITED STATES OF AMERICA

To

PROFESSOR H. PARKER WILLIS

“There are men who spend their time and fortunes in endeavoring to convince a dull world that poverty can be abolished by the issue of printed bits of paper. I know one gentleman who holds that exchequer bills are the panacea for the evils of humanity. Other philanthropists wish to make us all rich by coining the national debt, or coining the lands of the country, or coining everything.”

W. Stanley Jevons, *Money and the Mechanism of Exchange*.
Preface, p. vi.

PREFACE

QUALITATIVE credit control may be thought of as the control of credit through control of the debts from which it arises. The control of bank credit is that aspect of the more general problem to which attention is directed in this volume. The currency function which bank credit performs in advanced industrial countries makes its control of peculiar importance. It gives rise to the modern form of an old problem, that of providing the community with a medium of exchange which will not be debased or over-issued, and which will still be adequate for the needs of commerce.

In contrast to this approach to the control of credit is one which may be characterized as quantitative. Proposals based on the quantitative view usually imply that a sufficient control over bank credit can be obtained by altering the cash or reserve basis of the banking system. Little attention is given to the kinds or quality of the assets (debts) from which bank credit arises. Although it contains an evaluation of the quantitative approach to the control of credit, this treatise does not attempt a discussion of the quantity theory of money. Nor is it a history of credit theory. It is a study of the nature of credit and the credit system with a view to outlining fields of inquiry which, when investigated, may lead to the understanding necessary to operate the credit economy more smoothly. The object, therefore, is to seek a theoretical basis for fruitful research rather than to solve the problem of credit control.

The author is indebted to Professors James W. Angell and William H. Steiner, Dr. Arthur R. Burns and Mr. Ralph West Robey for helpful criticisms of the manuscript. To

Professor H. Parker Willis he is deeply indebted for the inspiration and training received, as a student and junior colleague, during an association lasting over a period of six years. Although it is impossible to express fully the extent of such a debt, especial thanks are due for criticisms of several drafts of the manuscript and for many bibliographical suggestions.

Mrs. C. P. Killien made many improvements in the style.

WILLIAM E. DUNKMAN.

NEW YORK CITY,
JUNE 28, 1933.

CONTENTS

INTRODUCTION	PAGE 17
------------------------	------------

PART I

THE THEORETICAL BASIS FOR CREDIT CONTROL

CHAPTER I

THE VALUE OF MONEY

Introduction	29
The Quantity Theory of Money	30
Errors in the Theory	34
1. Significance of Changes in the Price-Level	34
2. The Supply of Money	37
3. The Demand for Money	39
The Basis for the Theory of Money	43
Summary.	43

CHAPTER II

THE NATURE OF CREDIT

Introduction	45
What is Credit?	45
Some Confusions	47
1. The Use of the Word	47
2. The Proximate Genus	48
3. The Function of Credit	49
4. The Basis of Credit.	50
The Exchange Process	51
Analysis of a Credit Transaction	52
1. Elements of a Credit Transaction	56
2. Credit and Credit Instruments	58
3. The Basis of Credit	59
4. Relation of Credit to the Value of Goods	61
5. The Position of the Retailer After the Sale	61

	PAGE
Conclusions.	66
Appendix 1. Definitions of Credit	70
Appendix 2. The Basis of Credit.	77
Appendix 3. Classes of Credit	80

CHAPTER III

THE NATURE OF BANKING

Introduction	81
The Functions of Banking.	82
1. The Recognition and Generalizing of Credit.	82
2. Offsetting Debts	85
Central Banking	92
Summary of the Theory of Banking	95
Variations in the Concepts of Banking.	96
The Effects of Bank Credit on Prices	99
The Relation of Bank Credit to Gold	104
Appendix 4. The Functions of Banking	108

CHAPTER IV

CLEARANCE

Introduction	111
Clearance between Individuals.	111
Clearance between Banks	118
Clearance between Banking Systems.	123
Clearance between the Banks and the Community	125
Some Conclusions Regarding the "Value of Money"	132

PART II

QUANTITATIVE CONTROL IN PRACTICE

CHAPTER V

THE CRITERIA AND INSTRUMENTS OF CONTROL

Introduction	147
The Criteria of Control	147
1. The Price Level.	150
2. Production.	156

CONTENTS

13

	PAGE
3. Money Market Conditions	159
4. Future Federal Reserve Policy	160
5. Miscellaneous	160
6. Conclusions Regarding Criteria	160
The Instruments of Control	162
1. Interest Rates and Open Market Operations	162
2. Conserving Gold.	163
3. Qualitative Instruments	164

CHAPTER VI

EFFECTS OF CENTRAL BANK POLICY—CONTRACTION

Introduction	166
Importance of the Relation of the Central Bank to Other Banks.	167
Effects on Member Banks.	169
Effects on the Money Market.	177
Effects on Business	182
Effects on Bill Brokers	187
Effects on Capital Values	189
Summary.	201

CHAPTER VII

EFFECTS OF CENTRAL BANK POLICY—EXPANSION

Introduction	203
Declining Prices not the Converse of Rising Prices	204
The Difference between Credit and Inconvertible Money.	205
Position of the Banks in a Depression.	207
Effects on Business	208
Reliance on Offsetting Difficulties in one Field by Stimulation of Others	214
Rôle of Government Finance	215
Importance of the Condition of the Central Bank.	217
Importance of Banking Conditions	219
Conclusions.	220
1. Quantitative Control Inherently Inconsistent	220
2. Declining Prices a Result of Rising Prices	223
3. The Debt Problem in a Depression	225

PART III

THE QUALITATIVE CONTROL OF CREDIT

CHAPTER VIII

CREDIT CONTROL AND THE GOLD STANDARD

Introduction	229
Gold Movements an Indicator of Maladjusted Industry	233
Causes of Gold Movements Internal	234
Causes of Gold Movements Dependent on the Stage of Economic Maturity of the Country.	235
1. The First Stage	235
2. The Second Stage	236
3. The Third Stage	236
4. The Fourth Stage	237
Gold Exports by a Debtor Country	238
Gold Exports by a Creditor Country	242
Gold Imports by a Debtor Country	246
Gold Imports by a Creditor Country	247
Summary of the Significance of Gold Movements	255
The Abandonment of the Gold Standard	257
1. Gold Shortage and Maldistribution	257
2. Fluctuating Exchange Rates as Correctives	259
The Value of the Gold Standard	264

CHAPTER IX

THE THEORETICAL BASIS

Evidences of the Qualitative Nature of Credit Control	266
1. Controlling Prices at the Turning Points of the Index	266
2. Adoption of Qualitative Instruments	269
3. The Demand for Gold	271
4. The Attitude of Bankers	274
Inflation	274
Deflation	275
Credit Theory and the Theory of Value and Exchange	276

CONTENTS

15

PAGE

CHAPTER X

CREDIT THEORY AND CREDIT ANALYSIS

Goods and Credit	277
Dependence of Bank Liabilities on Bank Assets	278
Credit Theory and Credit Extension	281
Statement Analysis and the Theory of Credit.	287
Capital Goods and the Extension of Credit.	291
1. The Difference between Collateral and Purpose	293
2. Lending and Extending Credit	294
3. The Equilibrium of Savings and Investment.	298

CHAPTER XI

CREDIT ANALYSIS AND CREDIT CONTROL

Introduction	302
The Four Risks of Credit	303
Quantitative Control and the General Business Risk	305
Analysis of Individual Statements	307
Analysis of the Industrial Risk	308
The Use of Composite Statements.	309
Credit Extension and Credit Control.	313
Credit Analysis Viewed from the Banking Side	314

CHAPTER XII

THE ADMINISTRATION OF CREDIT CONTROL

The Aims of Credit Control	317
The Instruments of Control.	317
The Difficulties of Control.	318
1. Discrimination between Industries	318
2. Directing the Flow of Credit	320
3. Control of the Banks.	322
Qualitative Control and a Planned Economy	323
The Rôle of the Individual Banks in Credit Control	325
The Rôle of the Central Bank	326
1. Providing Information	327
2. Approach to Industry through the Study of Banking Con- ditions	328

	PAGE
3. Control through its own Operations—Acceptability of Paper	328
4. Basing Rediscounts on the Condition of the Applying Bank	329
5. Relation to the Money Market	330
6. Relation to the Foreign Exchange Market	332
BIBLIOGRAPHY	334
INDEX	339

INTRODUCTION

THE literature dealing with credit is divided into four fairly well differentiated and non-communicating compartments. Although two or more of them are sometimes presented within the covers of a single volume, they usually remain unrelated.

The two most clearly defined and, at the same time, least connected fields are credit control and credit analysis. Writers on these subjects have often written with apparent disregard, if not in ignorance, of each other's contributions. On the other hand, while each group has given recognition to a third topic, namely, credit theory, the nature of credit, as described by the two groups, varies considerably. The credit analysts tend to emphasize qualitative aspects, such as the character, capacity, and capital of the borrower, while the credit control group emphasize rather the quantitative relationships between gold, credit and goods.

The fourth phase of the subject has received only superficial treatment by the few authors by whom it has been discussed. This phase may be called the mechanism of banking, or the method by which debts are offset in a credit economy thus permitting the exchange of goods without the intervention of a commodity money. Colwell, Jevons, and more recently Hawtrey, have given excellent descriptions of this process; but these explanations have unfortunately never been fully expanded in theories of credit control.

Among specialists in the four subjects under consideration, those concerned with the art of banking, namely, credit control and credit analysis have approached the problem from different points of view. Students of credit control

have been concerned chiefly with the reserve basis of the credit structure, while credit analysts have dealt with the debt-credit structure itself.

In a country adhering to the gold standard, gold is the ultimate reserve base. With the introduction of central banking, however, the importance of this base is reduced because under this system the reserves of the commercial banks consist of deposits on the books of the central bank. The reserve base of these banks is thus more subject to control than when the banks are forced to maintain a gold reserve. The reserve function of gold is under this system, limited to the international relations of the banking system. The literature of "credit control" is characterized by discussions of the possibilities of controlling the superstructure of credit by controlling the size of the reserve base. Credit control has remained an inherently quantitative concept based on the belief that a change in the size of the reserve base will induce a multiple change in the superstructure. This alteration in turn is looked upon as a method of bringing about changes in prices, production, gold movements, or other phenomena. Credit control literature thus abounds in contradictory explanations, both theoretical and empirical, of the sequence of events from changes in the reserve base to changes in the criteria which are at once the guides and the objectives of control. Not satisfied with the flexibility of the reserve base introduced by central banking, some contemporary writers have advocated an inconvertible, or "managed", money. Adherence to the gold standard, it is held, interferes with the freedom of the central bank in adjusting the reserves of the banking system (its own deposits) to the needs of the situation.

To the author this approach to the problem of credit control seems incomplete. It goes no farther than the quantitative relationship between the reserve base and com-

mercial bank credit, while the real significance of the reserve as a means of settling unequal debts and credits is overlooked. When a debt structure has been built up, reserves become important as the ultimate means of settling balances of debts. Since gold is the means of making these settlements between countries, deposits on the books of the central bank the means of settling debts between banks in the same banking system, and deposits on the books of the commercial banks the means of settling debts between individuals, the ability of central banks to maintain gold reserves, of commercial banks to maintain central bank deposits, and of individuals to maintain bank deposits have a similar significance, namely, the ability to keep debts and credits equal. Credit control should aim at limiting debts between individuals, between banks, and between banking systems to those which can be cleared against credits. Regulation of the reserve base will not do this. The most that can be hoped for from this type of control is the regulation of the total quantity of commercial bank deposits. But it will not prevent the development of a debt-credit structure on the reserve base which may, due to its distribution, make the reserve base inadequate to settle the unmatched debts. Thus no matter what control is exerted over the reserve base and no matter what the nature of this base, whether gold, inconvertible paper, or central bank deposits, the problem of controlling the superstructure of credit remains. Lack of control leads to a condition in which the reserve base appears inadequate.

Credit analysis, on the other hand, while primarily concerned with the control of debts, at present goes no farther than a consideration of the limitation of individual debts. Such analysis does not, as a rule, rest on a satisfactory theory of banking since the prevailing conception is that the chief function of a bank is "money-lending". The banker is

thought of as lending the "deposits" of his clients rather than as building up deposits or liabilities by making loans. But the technique of credit analysis provides a better approach to the broader problems of credit control, than would an attempt to regulate the total quantity of credit by altering the reserve base.

Expansion of the credit analysis approach suggests possible methods of attacking the general aspects of the problem of credit control. Little attention has been given to this approach by writers on credit, and no attempt is made in the present volume to develop criteria for this type of control. Our chief interest lies in an attempt to correlate the various fields of credit literature with a view to pointing out the main lines along which fruitful research may be pursued in the development of such criteria. When the two theoretical subjects mentioned above are taken into consideration, namely, the nature of credit, and the mechanism of banking, the advantages of this approach become evident. In order to indicate briefly the main outlines of the problem of credit control, from this point of view, attention must be directed to the fundamental requisite that a borrower be able and willing to repay his loan at maturity. There has been a tendency in the past on the part of the banker to rely on the personal qualities of the borrower, such as honesty, business ability and the like, to assure himself that the loan would be liquidated. Recently, however, more attention has been given to the financial condition of the applicant as shown by his financial statement, in which the items upon which chief reliance must be placed are the accounts receivable and the inventory. The value of these, however, can be determined only by the condition of the receivables and inventories of other concerns, in the same industry. Furthermore, the financial condition of the customers who are expected to pay the receivables is of course

a factor in the financial condition of the applicant. The banker must, therefore, come to view each industry as a whole, rather than confining his analysis to individual concerns. He must include, as a part of his analysis, a study of the production of the industry as a whole, the sales, the inventories, the debts which these goods are to liquidate, price movements, etc. He must learn to think in terms of the credit standing not only of individuals and corporations but of industries as well. Thus instead of an attempt to adjust the total quantity of credit to the volume of production or to an average of prices by alterations in the reserve base, the problem of credit control becomes an attempt to build up a superstructure of credit which will not place too great a strain on the reserve base, because the debts upon which the credit structure is built will be liquidated by goods rather than settled by payments out of the reserve base.

Another aspect of the qualitative approach is found in the analysis of the maintenance of solvency. If we start once more with the individual, we find that he must continually obtain claims on others to an amount at least as great as their claims on him if he is not permanently to be faced with a deficit of cash or bank deposit. Likewise, each individual bank is able to meet its obligations to other banks only in so far as it is provided by its debtors with claims on other banks to an amount at least equal to the claims held against it by other banks. In the same way a banking system is able to meet its obligations without resort to the use of reserves only in so far as claims against it are offset by equal claims, provided by its customers on other banking systems. This is the basic thought underlying the theory of international trade and finance which is simply a larger phase of the general banking problem. Each bank or banking system must therefore analyze the business of its cus-

tomers as a whole to determine whether such business will provide the bank or banking system with sufficient claims on others to liquidate those which its own extensions of credit to its customers are placing in the hands of other banks or banking systems.

The approach to credit control by this route emphasizes the importance of the exchangeability of goods, and relates the study of credit closely to the study of economic value; for the sound expansion of credit is seen to be limited by the increase in exchange values. A general index of prices or a study of the relationship of the total quantity of bank credit to the total quantity of goods produced, is seen to be inadequate, for it gives no consideration to the exchange problems of an economy based on specialized production. An adequate study of credit requires that emphasis be given to the kinds of production, and to the conditions under which exchange is to take place, or to relative prices. Thus changes in the level of prices would seem to indicate changes in the degree of exchangeability of goods rather than changes in the value of money. Furthermore, in the study of bank credit the assets (debts) upon which such credit is based and the goods which are to liquidate them are of more significance than is the total quantity as compared with other total quantities. A new light has been thrown on the need of limiting bank assets to short term maturities. The usual explanation is that in this way the bank remains liquid for it can provide itself with cash more easily in case of need than if its assets consist of longer maturities. The opposing school, asserting that the bank can dispose of securities as readily as its customers can dispose of goods, holds that the banking systems cannot, without more serious effects than will result from security liquidation, cease lending to commercial borrowers or ask them to repay loans. This is particularly true if a large number of banks are involved;

for a widespread demand for repayment of loans based on commodities will break the prices of commodities quite as readily as would a large-scale liquidation of securities affect the securities market. But this is not the essence of the problem. Since the extension of credit always involves the estimate of values in anticipation of the sale of goods, the real problem is that of estimating these values as nearly correctly as possible. Only in this way can the currency (bank credit) be kept in proper relation to the value of goods. Therefore, a banking system which extends credit only on goods which are in the process of marketing or as near final sale as possible, thus limiting the degree of anticipation, will not make as many errors in judgment as one which extends credit for the purpose of providing the capital equipment to be used in the production of other goods. Thus clearance will be improved and the necessity of resorting to reserves in order to pay for goods which have not been exchanged against other goods will be reduced. When a banking system ceases to base the medium of exchange on exchangeable goods and becomes more deeply involved in production, it is treading on dangerous ground. For by making the bonds of industry or loans on stocks the basis of its deposits, the bank incurs a larger measure of liability for the risks of industry. Even though its debtors fail to repay their loans, it must meet its obligations on demand. Therefore, not only will industrial mistakes affect the bank's net worth, but losses will have to be made up by payments out of its reserves. The danger is particularly acute when the banking system is composed of a large number of banks, for each bank must bear its own losses and the result is likely to be a large number of bank failures. While this may seem to be justified in an individualistic philosophy, it is disastrous for the community. If the situation is serious enough it will lead to a demand that bank deposits be guar-

anted, either by the government or by the banks as whole. This is tantamount to a demand for the unification or socialization of the banking system. If values are to be thus guaranteed, it is but natural to expect that a more centralized control of production by one or the other of these agencies will follow. This may not be wholly undesirable, but it should be recognized as an aspect of the banking problem.

In the main body of the text, we have chosen to open the discussion with a theoretical analysis of the factors underlying the study of credit, money, prices, and banking to which Part I is devoted. The concept of "the value of money" is the central theme. The nature of the "supply of money" and the "demand for money" are found to have been incorrectly analyzed in many discussions, owing to a lack of differentiation between gold, credit, credit instruments, and fiat money. Likewise, the concept of the "value of money", as the inverse of the price level, is found to be inadequate and misleading. Chapter II is devoted to a study of the nature of credit, which, in a credit economy, is the chief form of purchasing power. In Chapter III, we turn to the rôle of banking in a credit economy with a view to determining the factors influencing the demand for gold or reserves. This is found to depend on the degree of perfection in the clearing of credit or the offsetting of debts. In Chapter IV, the factors leading to the breakdown of clearance between individuals, between banks, between banking systems, and between a banking system and the community are analyzed. It might be noted in passing that these four topics may roughly be referred to as introductions to the study of business administration, bank management, international trade, and economic equilibrium, respectively. Part II contains a review of the objectives and methods of quantitative credit control and an analysis of the effects to be expected from controlled alterations in

the size of the reserve basis. Part III begins with an attempt to estimate the value of the gold standard by interpreting, in the light of the principles of clearance, changes in the reserve base resulting from gold movements. The remainder of Part III is devoted to a discussion of the theoretical basis and gives the main outlines of the technique of qualitative credit control. The methods of credit analysis are found to be well suited to the measurement of credit as theoretically defined in Chapter II. In Chapter XI the concept of credit control is developed from the principles of credit analysis and is based on the necessity of maintaining a high degree of perfection of clearance in the four aspects discussed in Chapter IV. In the final chapter the instruments, agencies and difficulties of this type of credit control are discussed.

PART I

THE THEORETICAL BASIS FOR CREDIT CONTROL

CHAPTER I

THE VALUE OF MONEY

Introduction

THE question, "How much money does a country need", is an old one in the history of economic doctrine.¹ Today many economists are trying to answer it in terms of credit. The change from the older approach lies in the shift from an emphasis on the absolute amount of money needed to a search for criteria which will direct central banking authorities to increase or decrease the total amount of bank credit available. However, credit, like money continues to be thought of as a total quantity in most theoretical discussions of its control. There seem to be two reasons for the persistence of this approach, one theoretical, the other empirical. The theoretical foundation is based on the supply and demand theory of value and the empirical on experience with war inflation. Thus, discussions of credit control center about

¹ Alfred Marshall summarized part of the discussion of this problem as follows: "Petty thought that the money 'sufficient for' the nation is 'so much as will pay half a year's rent for all the lands of England and a quarter's rent of the Houseing, for a week's expense of all the people, and about a quarter of the value of all exported commodities.' Locke estimated that 'one fiftieth of wages and one fourth of the landowner's income and one-twentieth part of the broker's yearly returns in ready money will be enough to drive the trade of any country.' Cantillon after a long and subtle study, concludes that the value needed is a ninth of the total produce of the country; or, what he takes to be the same thing, a third of the rent of the land. Adam Smith has more of the scepticism of the modern age and says: 'it is impossible to determine the proportion', though, 'it has been computed by different authors as a fifth, at a tenth, at a twentieth and at a thirtieth part of the whole of the annual produce.'" *Money, Credit and Commerce* (London, 1923), footnote, p. 47.

Colwell, writing in 1860, came to the conclusion that the amount of money needed in a country is indeterminable.

the search for new criteria by which the volume of credit may be regulated, or present refinements in the analysis of the sequence of events which are said to follow changes in the quantity of central bank deposits. Economists have been so long taught to think in terms of certain kinds of totals and averages that little attention has been directed to the assumptions and theory upon which this quantitative approach is based. The evolution of the theory of credit control from the supply and demand theory of value has been so gradual that few have recognized the errors in its application to credit. Experience with suspended gold standards and war inflation has tended to offer such evidence of the soundness of the quantity theory of money that when the economist turns his attention to credit control his thoughts are unconsciously influenced by results obtained under fiat money. Evidences of the concomitant expansion of credit and prices have tended to reinforce the belief that price movements can be induced by credit policy.

We propose, therefore, by a logical rather than an historical approach to examine the supply and demand analysis as applied to the theory of credit.

The Quantity Theory of Money

At the root of the theory of credit control is the theory of the value of gold. A dominant approach to credit control has developed along the following lines. Since gold is an economic good its value is subject to fluctuations like that of any other commodity. Changes in the relative values of economic goods are ordinarily reflected in changes in their prices, but since the price of gold, stated in terms of the money of account, is fixed under a gold standard, changes in the value of this good must be reflected in changes in the prices of other things.² Since each price represents the

² For example, compare the following:

"Does a level of prices give us a measure of value? It does give us

relation between gold and some other commodity, if it can be determined that a change has taken place in the average of prices, then it follows that the value of gold has changed. Thus changes in an index of general prices are taken as representative of changes in the value of gold.

Furthermore, the value of gold, like the value of other goods, is determined by supply and demand. In earlier discussions of the problem, the demand for gold did not receive careful attention and was assumed to be constant. But when in these discussions the demand was taken into consideration, it was held to arise from the need for a medium of exchange, and this is the amount of exchange work to be done, or the volume of trade. On the supply side, however, much careful analysis has been made, first by Soetbeer whose work has been carried down to the present by many writers.³ But in addition to the physical supply of gold, it was early pointed out that the rapidity with which it circulated was an additional influence.⁴ Such according to Mill,⁵ was the theory of prices as related to gold.

a measure of the value of the standard commodity, but of nothing else." J. L. Laughlin, *Money, Credit, and Prices* (Chicago, 1931), p. 25.

"Most people, for example, who in recent years have called attention to the appreciation of gold have given an explanation which implies that there is a very direct relation between the quantity of metallic money and the general level of prices. They have argued that the supplies of gold have fallen off, that gold is hoarded by governments and banks, that silver has been demonetized, whilst on the other hand the volume of trade or the amount of exchanges to be effected has increased." J. S. Nicholson, *Treatise on Money*, pp. 143-4.

For a later statement see the *Report of the Gold Delegation, of the Financial Committee, League of Nations* (Geneva, 1932), p. 26.

³ *Interim Report* (Geneva, 1930), League of Nations Gold Delegation.

See also Laughlin, *op. cit.*, ch. iii, vol. i.

⁴ For a fuller discussion of the concepts of the velocity of circulation see R. H. Lounsberry, "Velocity Concepts and Prices," *The Quarterly Journal of Economics*, vol. xlvii, no. 1.

H. J. Davenport, "Velocities, Turnovers and Prices," *American Economic Review*, vol. xx, no. 1, March, 1930.

It was soon recognized, however, that many exchanges

A. C. Pigou, *Industrial Fluctuations* (London, 1927), pt. i, ch. xv, art. vii.
J. M. Keynes, *Treatise on Money*.

After credit is introduced into the theory, more attention is given to the velocity of circulation. For example, in the statement of the quantity theory of money by Keynes in his *Monetary Reform* and by Hawtrey in his *Currency and Credit* the velocity of circulation plays an important part. In these theories it becomes a question of whether the community spends its income or keeps it in the form of bank balances. In the *Treatise on Money*, Keynes seems to carry the analysis one step further by pointing out the effects of alterations in the proportions of the community's income spent for consumption goods and capital goods. Later in the present volume emphasis is given to the fact that the kind of consumption goods which the community buys is an important factor in the theory of credit and prices. Thus what started as a simple concept of the number of times a given piece of money was used in a period of time is seen to be a complex one of the distribution of the community's expenditures.

In the following passages Marshall indicates the inadequacy of the simple concept of velocity and emphasizes the importance of the study of prices and consideration of whether or not people decide to spend their incomes.

"The total value of a country's currency, multiplied into the average number of times of its changing hands for business purposes in a year, is of course equal to the total amount of business transacted in that country by direct payments of currency in that year. But this identical statement does not indicate the causes that govern the rapidity of circulation of currency: to discover them we must look to the amounts of purchasing power which the people of that country elect to keep in the form of currency.

". . . every change in the rapidity of circulation of goods tends to cause a corresponding change in the rapidity of circulation of currency, and substitutes for currency: . . .

"It will appear, on consideration, that changes in the rapidity of circulation of money are themselves incidental to changes in the amount of ready purchasing power which the people of a country find it advantageous to keep in their own holdings." *Money, Credit, and Commerce*, p. 43.

§ J. S. Mill, *Principles of Political Economy* (New York, 1920), vol. ii, p. 30. "So that the value of money, other things being the same, varies inversely as its quantity; every increase of quantity lowering the value, and every diminution raising it, in a ratio exactly equivalent." Vol. ii, p. 31, "If we assume the quantity of goods on sale, and the number of times those goods are resold, to be fixed quantities, the value of money

were made by means of credit instruments. Although the strain on the demand for gold was thereby relieved, it was nevertheless necessary to add to the supply of gold, the number of credit instruments in use (usually including only bank notes and bank deposits to the exclusion of other credit instruments). But as these media of exchange also have a velocity of circulation, the theory must make allowance for this. The net result is that the supply of money is now thought of as including the supply of gold, and the supply of credit instruments each modified by its velocity of circulation, according to the theory of Professor Fisher.⁶ This theory is the basis for credit control for it introduces the possibility of effecting changes in the price level through alterations in one of the elements of the supply of "money".⁷

will depend upon its quantity, together with the average number of times that each piece changes hands in the process."

The early history of the quantity theory is well traced by Dr. H. Parker Willis in an article in the *Journal of Political Economy* for September, 1896.

⁶ Irving Fisher, *The Purchasing Power of Money* (New York, 1911), p. 29. "To recapitulate, we find then that, under the conditions assumed, the price level varies (1) directly as the quantity of money in circulation (M), (2) directly as the velocity of its circulation (V), (3) inversely as the volume of trade done by it (T). The first of these three relations is the most important. It constitutes the quantity theory of money."

"The equation of money circulation extended so as to include bank deposits reads thus:

$$MV + M'V' = \Sigma p Q \text{ or } P T, \text{ p. 53.}$$

See chs. i and ii.

Although much has been written about credit control since Professor Fisher published the work referred to above, the quantitative approach has remained dominant. The essential additions of the more recent theories have been the discussions of the sequence of events following changes in the quantity of central bank credit, the instruments by which these changes may be brought about, and the criteria to be used in determining central bank policy. Each of these is given attention in subsequent chapters. See also footnote 4.

⁷ For a recent discussion of proposals for credit control based on the

Errors in the Theory

While the possibility of controlling the level of prices which the theory, as thus stated, offers is attractive, the logic contains so many errors that they should be fully recognized before practical proposals are based on it. It is questionable whether any of the three quantities involved, namely, the value of money, the supply of money, and the demand for money, are validly represented in this way.

I. Significance of Changes in the Price Level

At the root of the errors, is an ambiguity in terminology. Originally, the theory was advanced as an explanation of changes in the value of gold. But in later statements, the price level came to mean the value of "money". It remains to be shown, however, that an analysis which applies to the commodity gold, applies to gold *and* credit. Gold and credit can be added together only on the implied assumption that credit is an *additional* medium of exchange sufficiently like gold to be considered a substitute for it.⁸ It seems nearer the facts to say that credit is not a *substitute* for gold, but a *potential demand* for gold, a promise to pay gold, other means of payment failing. Very often these other means do fail and the demand for gold increases sharply. J. S. Mill, in a passage which is too seldom quoted, has called explicit attention to the limitations of the quantitative analysis. He says,

quantity theory of money, see Caroline Whitney, "The Equation of Exchange and the Price Stabilization Problem," *American Economic Review*, vol. xxii, no. 2, June, 1932.

⁸ Only a few authors have been careful to distinguish between money and credit. Most writers assume that credit is a form of money. See for example Keynes's classification which calls credit, "Bank Money". *Treatise on Money*, ch. i, vol. i. Colwell, on the other hand, is one of those who stresses the distinction: e. g., "We believe it would greatly lessen the abuse of credit, if the distinction between money and credit were more carefully studied and observed." *The Ways and Means of Payment* (Philadelphia, 1860), p. 503.

The proposition which we have laid down respecting the dependence of general prices upon the quantity of money in circulation, must be understood as applying only to a state of things in which money, that is, gold or silver, is the exclusive instrument of exchange, and actually passes from hand to hand at every purchase, credit in any of its shapes being unknown. When credit comes into play as a means of purchasing, distinct from money in hand, we shall hereafter find that the connection between prices and the amount of the circulating medium is much less direct and intimate, and that such connection as does exist, no longer admits of so simple a mode of expression.⁹

And we ask with J. S. Nicholson, "But if, as Mill states, the quantity theory only holds good in a state of things in which credit in all its shapes is unknown, the question naturally arises—is the quantity theory of any importance in a state of things in which credit in all its shapes is the dominant factor?"¹⁰ The difficulty of fitting credit into this type of analysis must at least be recognized, for while credit instruments, like gold, may increase the supply of media of exchange, they also hold the possibility of becoming a demand for gold. It seems, therefore, wholly illogical to add these diverse quantities together. Such a technique blurs the whole analysis for it obscures the meaning of the level of prices. In an economy in which gold is the only form of money, the concept of the price-level as representative of

⁹ *Principles of Political Economy*, bk. iii, ch. viii, art. iv.

Laughlin states the matter as follows: "Hence, any change in the value of the standard will immediately modify all gold prices. . . . Nevertheless, the possibility of changing all prices by a change in the value of the standard has been undoubtedly the basis of some serious fallacies in the theories of prices, for it has led to the belief that the level of all prices could be modified by operations directed on the quantity of all money in circulation. The error in this belief lies in not separating the standard from other forms of money which act only as mediums of exchange, and in not realizing that prices are necessarily expressed in the standard, no matter what that may be." *Money, Credit and Prices*, vol. ii, pp. 689-690.

¹⁰ Nicholson, *op. cit.*, p. 143.

the value of money can be grasped. But in the later stages of the theory, it is difficult to understand the meaning of the "value of money" when the supply of such money is made to include the dissimilar elements of gold and credit instruments, since we must suppose the credit instruments to be on the one hand substitutes for gold, and on the other, a demand for gold.

There is a still further error, however, which interferes with our acceptance of the price-level as the measure of the "value of money." This is the mathematical one mentioned above. Changes in the average of prices can be interpreted as changes in the value of money only on the theory that a large number of prices changing in the same direction indicates the probability of a change in the value of money. If this assumption were correct, the movements of prices would necessarily be independent of each other. This is obviously not true.¹¹ The chief factor in the analysis is thus an

¹¹ The significance of this concept is that it places the responsibility for price changes on the forces of supply of and demand for money, usually the main emphasis being placed on supply. Industrial activity is therefore depressed or stimulated by changes in the value of money, viewed as an independent factor. For a discussion of the level of prices interpreted as the inverse of the value of money see Keynes, *Treatise*, vol. i, p. 79 *et seq.* Monetary theorists are greatly indebted to Mr. Keynes for the correction of this fundamental error which has persisted unnoticed for so many years. But if we grant that Mr. Keynes proves the point, the question naturally arises, what does the change in the price level indicate and why is he still concerned with price indexes. His answer is that a price index is significant only in so far as it is composed of the prices of goods which in themselves are significant as a group. He lays chief emphasis on the price level of goods which consumers use. This index then represents the purchasing power of money in consumption. The importance of this shift in point of view is that it directs attention to an entirely different set of factors as the determinants of changes in the price level. Instead of seeking the causes of changes in the "value of money" in the supply of money and the demand for money, we are led to a study of incomes and quantities of consumers' goods, each interpreted as a flow. We shall later return to a discussion of this view as a part of the discussion of the sequence of events from changes in the quantity

ambiguous entity and cannot be accepted as representing what is claimed for it, namely, the value of money.¹²

2. The Supply of Money

The other factors, namely the supply of "money" and the demand for "money" likewise, cannot be measured in the manner suggested. We have in the preceding section seen the difficulties and confusion introduced by credit into the analysis of both supply and demand. But further errors in the measurement of the supply of money have been introduced by lack of differentiation between credit and credit instruments. Furthermore, too much attention has been devoted to instruments of bank credit—deposits and notes—to the exclusion of commercial and private credit instruments. In both fields, too great importance has been attached to the material embodiments of credit transactions—notes, drafts, and checks—and too little to the potential power of persons and corporations to acquire goods and services without paying for them immediately. Mill points this out very carefully in the following passages:

I apprehend that bank notes, bills, or cheques, as such, do not act on prices at all. What does act on prices is Credit, in whatever shape given, and whether it gives rise to any transferable instruments capable of passing into circulation, or not. . . .¹³

The amount of purchasing power which a person can exercise of central bank deposits to changes in the level of prices (Chapter VI). It should be noted that Mr. Keynes' practical conclusions are essentially the same as those derived from the older theory, namely, that the level of prices can be controlled through alterations in the total volume of central bank credit. In fact, he returns to the use of an index of wholesale prices in the later part of his treatise, thus destroying the whole force of his earlier theoretical treatment.

¹² Later discussion will indicate that the author of this monograph feels that changes in the general level of prices are the result of changes in the degree of exchangeability of goods.

¹³ Mill, *op. cit.*, bk. iii, ch. xii, art. 1.

is composed of all the money in his possession or due to him, and of all his credit. For exercising the whole of this purchasing power he finds a sufficient motive only under peculiar circumstances; but he always possesses it; and the portion of it which he at any time does exercise, is the measure of the effect which he produces on price. . . .¹⁴

In a state of commerce in which much credit is habitually given, general prices at any moment depend much more upon the state of credit than upon the quantity of money.¹⁵

The supply of "money" or purchasing power in a credit economy is thus not a question of the supply of *credit instruments*, and certainly not of a particular kind of credit instrument, namely, bank notes or deposits. This is readily seen if we imagine a credit economy without banks. In such a community much business could still be done on credit. It would only be necessary that business men be willing to ship goods to one another in exchange for promises in the form of notes, accepted drafts, or book credits. A merchant who received such an instrument might then use it to purchase goods for his own business by transferring it to his creditor at a premium or discount, depending on whether it was interest-bearing or not. Business men would thus provide their own media of exchange, provided the *state of credit* was sound. Mill, in fact, indicates that just such a system apparently did exist for he says,

Many bills, both domestic and foreign, are at last presented for payment quite covered with indorsements, each of which represents either a fresh discounting, or a pecuniary transaction in which the bill has performed the function of money. Within the present generation, the circulating medium of Lancashire for sums above five pounds, was almost entirely composed of such bills.¹⁶

¹⁴ *Ibid.*, art. 2.

¹⁵ *Ibid.*, ch. xi, art. 3.

¹⁶ *Ibid.*, ch. xi, art. 5. Marshall makes a similar statement. See *Money, Credit and Commerce*, p. 142.

The full significance of a credit system, however, is not found in this purchasing and selling on the basis of deferred payment. The fully developed credit economy must provide some means of offsetting the obligations arising out of credit transactions—that is, of dispensing with gold to as large an extent as possible. Since without banking this would be very difficult, it is here that banking performs its chief function in the realm of exchange. Hawtrey gives a very full description of the process.¹⁷ When business men have established these obligations or debts as the result of purchases and sales, the bank performs the services of a dealer in them. By substituting its own promises for those of business men, it concentrates their debts in the banking system, and clears them, or liquidates them by the process of offset. But it does more. In the process of discounting and “lending”, it substitutes its own *demand* promise for a deferred promise, thus making its notes or deposits “as good as gold” for it stands ready to deliver gold on demand in exchange for its promises. It thus guarantees the business men’s notes which it takes into its portfolio.¹⁸ Hawtrey carries the analysis to its logical conclusion by indicating that a credit system might exist without any gold. Fully to understand the nature of the supply of “money” or purchasing power in a credit economy it is therefore necessary to look deeper than credit instruments which are, after all, only the physical embodiments of previous credit transactions.

3. The Demand for “Money”

Finally, in a credit economy, the concept of the demand for “money” is quite as ambiguous as are the concepts of

¹⁷ Hawtrey, *Currency and Credit* (London, 1923), ch. i.

¹⁸ Willis and Edwards, *Banking and Business* (New York, 1925), pp. 20, 21. “Secondly, the bank, after recognizing or analyzing credit, guarantees it. It does this by substituting its own credit for that of the ‘borrower’ or owner of wealth.”

the "value of money", the "supply of money". It actually contains two wholly distinct ideas. The original analysis evidently contemplated a demand for a medium of exchange. Hence, the volume of trade is taken as representative of the demand for a medium of exchange and, therefore, for money. But when the simple monetary economy gives way to a credit economy, the analysis is not valid. Media of exchange in a credit economy do not exist independently of trade, as does gold in a monetary economy. If business men are willing to buy and sell on credit, *they provide their own media of exchange* in the form of notes, acceptances, and open book accounts. They are freed from reliance on a commodity medium of exchange such as gold and from the inconvenience of its natural limitation of supply. The problem of the demand for a medium of exchange is thus entirely different in a credit economy from what it is in a monetary economy.

The other idea involved in the concept of the "demand for money" is the demand for gold. When gold is used as a medium of exchange, the demand for gold and the demand for a medium of exchange are the same. But when credit instruments are used as media of exchange the demand for gold is quite another thing.

It is usually assumed that the demand for gold varies with the quantity of credit instruments, particularly with the volume of bank credit instruments. Conversely, it is assumed that the amount of bank credit instruments is limited by the quantity of monetary gold. Reflection on the nature of a credit economy indicates that this is not so. The essential characteristics of a credit economy are three, namely, that purchases and sales be made by the transfer of obligations, that these obligations be stated in terms of a money of account, and that there be a system of cancelling or offsetting these obligations. That is, in short, a credit economy

is one in which a system of indirect exchange of goods may take place *without the use of gold*. In a credit economy in its most perfect state, no gold at all would be necessary; in the imperfect state of credit economies at the present time, however, there is a demand for gold, but it is of a wholly different character from that usually assumed.

It is the increase of the volume of bank credit which paves the way for a possible demand for gold. It may be that an effort to raise prices through the expansion of bank credit will merely result in a demand for gold, for bank deposits are not only a medium of exchange but also a potential demand for gold. The superstructure of credit, which is so often assumed to be built up on and to vary *pari passu* with a gold base, is seen to rest not on gold but on *clearance*. It is of utmost importance that a bank or a banking system give first attention to clearance, rather than to the amount of its gold reserve. It would be quite possible for either a bank or a banking system, to lose unit for unit of gold for every increment to its liabilities or bank credit extended. We hope to show that this *clearance* depends on *trade*, that is, on reciprocal purchase and sale. Only in so far as trade clears, can credit clear. The offsetting of credit is only the financial counterpart of the exchange of goods. Just as two business men might offset an unlimited quantity of debts—or credit, if they were engaged in mutual trade—so the banking system, under much more complicated conditions, offsets the debts of business men generally. And just as one of the two men, mentioned above, would be in a precarious position if the other stopped buying from him or substantially reduced the amount which he was willing to take, so when the producers of certain commodities find their sales cut off or reduced, the clearance of credit between banks breaks down and some bank, group of banks or banking system suddenly finds that it has large balances to settle by

some other means than clearance. If this situation is sufficiently severe, there is a financial crisis. "An elaborate process of setting-off can no longer be kept in operation; an intricate system of balances and equalizations which had been created by the evolution of business has suddenly ceased to work; the community grasps for some means to carry on its affairs, and returns to the practice of an early epoch when actual, physical, materialistic money was current."¹⁹ This leads to the sudden demand for gold, the cry of "shortage of money", demands for bi-metallism, etc. because "the gold standard has broken down" and there is consequently "not enough money with which to do the business of the world."²⁰

¹⁹ W. G. L. Taylor, *The Credit System* (New York, 1913), p. 38.

²⁰ Cf. the following: "Such variations of prices mean that the value of gold is itself altered in the inverse ratio, and these variations are produced mainly by extensions of credit. Every one who promises to pay gold on a future day, thereby increases the anticipated supply of gold, and there is no limit to the amount of gold which can thus be thrown upon the market. Everyone who draws a bill or issues a note, unconsciously acts as a 'bear' upon the gold market. Everything goes well, and apparent prosperity falls upon the whole community, so long as these promises to pay gold can be redeemed or replaced by new promises. But the rise of prices thus produced turns the foreign exchanges against the country, and creates a balance of indebtedness which must be paid in gold. The basis of the whole fabric of credit slips away, and produces that sudden collapse known as a commercial crisis." W. S. Jevons, *Money and the Mechanism of Exchange* (New York, 1903), p. 309.

Jevons here places emphasis on the international aspects of the problem, but the same thing happens internally. The significance of this view is that it fixes attention on the sharp increases in demand to which gold is subject. We are hardly justified in attributing a given collapse to a shortage of "money", saying that prices have gone down as the value of money went up. Nor are we justified in assuming that this fall of prices can be corrected by increasing the quantity of money, least of all, by increasing the quantity of credit, i. e. an increase in the promises to pay gold, when the conditions of business have brought about a situation in which those who have already entered into such obligations are finding it difficult to fulfill their engagements.

The Basis of the Theory of Money

It is often said that credit is a medium or mechanism of exchange. Yet practically all of the theoretical discussions of credit are expressed in quantitative terms as though credit were objective or materialistic. No emphasis at all is placed on "exchange". In fact, those goods which are to be exchanged and the prices representing their exchange value are averaged together in indexes, thus burying the very factors needed to solve the problem. If, however, the subject is approached from the point of view outlined above, namely, that credit is a potential demand for gold and not simply a supplement to it, attention is focused on clearance and, through this, on exchange. Credit is then seen to be a qualitative matter and not a quantitative one; it does not exist independently of trade, and cannot be added to, or subtracted from, in order to bring it into proper relation to the "demand for money".

Summary

The problems raised by this brief survey of monetary theory are further developed in the remaining chapters of Part I. The next chapter is devoted to a study of the nature of credit, which is a counterpart of the study of the supply of money in a monetary economy. The supply of credit, however, unlike that of commodity money or fiat money, is not independent of the economic goods which are to be exchanged. On the contrary, the amount of purchasing power which can be exerted through the use of credit is dependent on the exchange values of commodities. Since this purchasing power is employed in anticipation of the final determination of such exchange values, price changes will be caused by changes in the estimates of exchange values. This is the interpretation of the supply of purchasing power and the level of prices with which Chapter II deals.

In reviewing the nature of the demand for money (p. 39

above) it was pointed out that two concepts are involved. The first of these is the demand for a medium of exchange. This we have suggested is met in a credit economy by writing credit instruments. The other phase of the demand for money is the demand for a medium for settling debts which are not liquidated by offset. The relation of credit to money, therefore, cannot be thought of in simple quantitative terms, but depends upon the degree of perfection of clearings. Thus a given volume of trade, or a given quantity of credit, will require more or less reserve, depending on the proportion in which the trade and credit offset.

Since it is through the mechanism of the banking system that credit is cleared, or debts are offset, it is necessary to examine the functions and nature of banking in order to understand the reasons for the breakdown of clearance. Chapter III presents such an analysis of banking. In Chapter IV the factors bringing about an increase in the demand for reserves as a result of the failure of clearance to take place are examined. As a result of the analysis in Part I the conclusion is reached that the proper control of bank credit is through the limitation of debts to those which will clear. Furthermore, it is held that changes in the level of prices over cyclical or short term periods are a result of the directions in which credit has been extended or of the distribution of debt. They cannot, therefore, be controlled by alterations in the size of the reserve base. It follows that the more perfectly credit is controlled the less important becomes the influence of the reserve base. It cannot be expected, therefore, that efforts to control the cyclical movements of prices and credit by changes in the size of the reserve base will be successful. The proposals to do this are discussed in Part II and the difficulties with which such attempts will be faced are pointed out. In Part III the lines along which credit research should be pursued are indicated, through an analysis based on the theoretical conclusions reached in Part I.

CHAPTER II

THE NATURE OF CREDIT.¹

Introduction

THE present chapter will be devoted to a study of the origin and nature of the supply of purchasing power in a credit economy. Confusion has been introduced into monetary theory by the lack of differentiation between the terms "supply of money" and "supply of purchasing power". Since, as has been indicated in the preceding chapter, credit instruments are a potential demand for gold, they cannot be substituted for it or added to it in an extension of a quantity theory of money. If then credit instruments (principally bank notes and deposits) cannot be thought of as acting on prices, we are faced with the necessity of answering the question, "What is it that acts on prices on the money side?" The answer is that in a credit economy it is credit which acts on prices.

What is Credit?

Thus the analysis of the demand for goods becomes a study of the nature of credit, for credit is the purchasing power which influences prices and the price level. It becomes necessary to examine the origin of this purchasing power and to seek an answer to the question, "What is credit"?

A review of the literature of credit yields such highly diverse answers to this question and leaves the student in such a state of confusion that a rather detailed examination of the definitions of credit seems highly worth while.

¹ It is recommended that the reader examine the appendices to this chapter before reading the text.

It may well be argued that it is not necessary to know what credit is, in order to control it. Do we not, for example, exert a great deal of control over electricity, and yet not know what it is? On the other hand, however, much is to be gained by attempting to pursue a rigorous line of thought in the search for a satisfactory definition. It will aid in separating the essential from the incidental, and in preventing us from going too far down a contributory channel.

We shall seek what Arthur Schultze calls a scholastic definition, i. e. "The designation of the proximate genus and the specific difference."² Excellent authority bids us be cautious. We are told that the game isn't worth the candle or, more strongly, that what we are attempting cannot be done. Hawtrey warns the reader in his opening sentence, "Money is one of those concepts which, like a teaspoon or an umbrella, but unlike an earthquake or a buttercup, are definable primarily by the use or purpose which they serve."³ "Analysis and description are much more important than definition."⁴

Actually, however, there is hardly a book on the subject of Money and Credit which somewhere does not contain a sentence beginning, "Credit is . . ." The result is a definition fitting the particular ideas developed at the time, rather than a definition arrived at as a result of careful thought directed to the specific end of defining credit. We shall, therefore, pursue our objective and hope that the effort will not have been wasted.

² *Teaching of Mathematics in Secondary Schools*, Macmillan and Co. (New York, 1926), p. 66.

³ Hawtrey, *Currency and Credit*, p. 1.

⁴ B. M. Anderson, *The Value of Money* (New York, 1917), p. 459.

Some Confusions

I. The Use of the Word

A familiar expression, which everyone apparently understands and yet which has no definite meaning, is, "to give credit". It is used sometimes in an economic and sometimes in a quite different sense. Now a commendable act of an individual is taken into consideration in forming an estimate of his character or worth and again the success of an undertaking is attributed to one person rather than to another. Used in a business sense, the expression usually means the right to acquire goods without making an immediate return of equal value; for example, the corner grocery is said to "give credit" to certain customers and a bank is said to "give credit" to a borrower. The meaning of the term as thus used is simply that one person gives another the *right* or power to acquire goods.

Contrasted with "giving credit" is the expression, "to have credit". In one sense there is no confusion between these two phrases, for if one has been given credit, he obviously has it. For example, if a store has given credit to an individual, he can correctly be said to have credit at that store. But there is a more fundamental connotation to the expression than this, when it is implied that one may "have credit" independently of any other particular individual, corporation, or bank. That is to say, the individual has credit and it only remains for another to recognize the fact. Witness, for example, references to the "credit strength" of a corporation, or advertisements to the effect that "your credit is good in our store." Such expressions leave us with a fundamental problem, namely, who has the credit, the borrower or the lender, the buyer or the seller, or does credit exist independently of either? One writer has attempted to answer this question as follows, "Obviously, the seller does not give the goods and credit also. Credit is given by the

buyer in exchange for the goods, and by the borrower in exchange for the money." ⁵ Not only do persons have credit, but apparently inanimate objects likewise possess this elusive quality. Marshall speaks of, "The credit of a currency".⁶

Uses of the word "credit", which indicate that it is unrelated to persons or objects, are many. One speaks, for example, of "the proper requirements of credit", "credit as an indispensable factor" in modern economic society, and of exchanges being made through "the medium of credit". The accountants have still another meaning for "credit". In their terminology a "credit" is an entry on a ledger—an entry which increases a liability or decreases an asset. This usage is apparently a specialized terminology and need not detain us further. Such diverse uses of the word are but indications of the confusion of thought as to the nature of credit. This confusion is equally apparent in attempts at the statement of a formal definition.

2. The Proximate Genus

The requirements of a definition demand the statement of a genus to which credit belongs and its differentiation from other members of that general category. It is with this thought in mind that we examine the definitions which have been offered. The categories submitted range from an institution to a quality. Of those which class credit as a quality, some put it as a quality of human beings and others as a quality of economic goods. How can one answer quantitative questions regarding credit with so little guidance as to what it is? Examination of the definitions given in Appendix I emphasizes the hopeless confusion which exists regarding the essential nature of credit. Summarized, these definitions say that credit is:

⁵ Tregoe, *Credit and Its Management* (New York, 1930), p. 28.

⁶ Marshall, *op. cit.*, p. 47.

Faith	A promise
Confidence	A debt
Trust	Borrowing power
Honor	A deferred payment
A privilege	Lending
Permission	Purchasing power
A condition	Exchange value
A quality	A right
Machinery	Property
A transfer	A science
Exchange	A substitute for money

It is impossible to get from such a diversity of categories a fundamental agreement for a starting point from which to develop a definition of credit. Perhaps they who say that credit can be defined only by what it does are right, but there are almost as many functional definitions as objective categories. An extended list is given in Appendix I.

3. The Function of Credit

The functions which have been attributed to credit bear a greater uniformity than the objective categories to which it has been assigned. We can still agree with Mill however, that, "the functions of credit have been a subject of as much misunderstanding and as much confusion of ideas, as any single topic in Political Economy".¹ The major function assigned to credit seems to be that of bringing about the exchange of goods. But it is not clear how much importance we are to attach to the deferring of payment, the confidence upon which the exchange takes place, and the mechanism which restores a condition approximating barter. In some of these definitions the element of the value of the goods, which in some way or other is made available for the purchase of other goods, plays a prominent part to the subordination

¹ J. S. Mill, *op. cit.*, vol. ii, p. 50.

of the elements of futurity and confidence. Another prominent function is that of bringing capital together and making it available for effective production.

4. The Basis of Credit

While some of the definitions given in the second group present useful concepts, they do not advance our search for the proximate genus. Some make vague references to business confidence, media of exchange, a machinery, business integrity or the value of goods. But functional definitions are of little assistance in answering a quantitative question such as, "How much credit should there be in existence?" or the qualitative question, "What is a sound credit structure?" Commenting on such definitions Tregoe makes the following observation: "Definitions of credit have been confined largely to its use and not its content, to what it does and not to what it is. . . . Answering this question by describing it as a medium of exchange; as giving value in suspense for immediate value; of exchanging a promise for goods or money, are not descriptive of the elements that adapt credit to these important uses."⁸ His own answer is not, however, very illuminating, for he says that the content of credit is "a human power."⁹ But his suggestion is a good one and we shall ask the indulgence of the reader while once more the background of the discussion is presented in an appendix. The various bases which have been offered are presented in Appendix II.¹⁰

Examination of the bases suggested reveals hopeless confusion. We are told that credit is based on gold, goods,

⁸ Tregoe, *op. cit.*, p. 17.

⁹ *Ibid.*, p. 18.

¹⁰ It will be noted that some of the bases given in the second appendix utilize definitions quoted in appendix I. This duplication is necessary because the author quoted has supplied a basis out of which credit arises as well as an objective statement as to what credit is or does.

human power, confidence, reputation, rights of action, spiritual values, and deferred payments. Tregoe presents an interesting theory in which credit is compared to a chemical compound which is made up of several elements. In determining the soundness of credit we make an analysis much like a chemical analysis, to determine whether it includes the proper elements in the correct proportions. His statement of this is as follows: "A measuring rod has been constructed by examination and experiences to determine whether the credit offered in mercantile and financial exchanges is of the proper chemistry; this measuring-rod has been popularly designated as the 'Three C's of Credit', which are the measurement of credit's spiritual and material elements."⁸ But he leaves uncertain the quantities of these elements which we may expect to find and then further confuses us by saying that credit is based on gold and is a human power.

Jevons also beclouds the issue by leading us to believe that credit is based on the value of goods, only later to tell us that all of the figures in the books of banks represent gold. On the other hand some authors, such as Anderson and Goodliffe, are insistent that the basis of credit is goods.

The Exchange Process

Although our review of definitions and bases of credit have not led to any conclusive results, it has at least indicated certain significant relationships in a credit economy. Credit has been thought of as being related in some way to gold, to goods, and to human beings, both individually and collectively. Furthermore, there seems to exist a typical mechanism of exchange similar to and yet different from a money or barter economy. In order, therefore, to define credit, it will be necessary to develop a theory of the exchange process, for as Taylor says, "a theory is a description of the reflection of the world of acts and deeds in the mind of the writer."¹¹

¹¹ Taylor, *op. cit.*, p. 14.

Since the "acts and deeds" undergo changes with the passage of time, it may be that some of the confusion which we have noted above has been a result of changing conditions as well as of differences in the reaction of economists to them.

We shall not attempt to develop different classes of credit as such, but rather to find the significant features in economic transactions which are generally described as involving credit. Various classifications of credit which have been made are given in Appendix III. Classifications such as these are useful in discussing credit phenomena or banking policy but will not help in explaining the essence of credit. We cannot learn what a horse is by being presented with classifications such as heavy-light; white-bay-roan-dapple-black; dray-riding-coach. Just so classifications will not help in explaining the nature of credit while our underlying concept is undefined. For example, shall the classifications be applied to various types of loans, sales with deferred payment, debts, power to borrow, purchasing power, faith, confidence, or spiritual values.

Analysis of a Credit Transaction

In some respects, it is not advisable to start an analysis of credit transactions by examining the transactions of individuals. We shall find that certain questions in connection with them will be unanswerable until we have gone further. But by making temporary concessions, to be explained as we go along, we can learn much about the fundamental nature of credit from this range of phenomena, for it is situations of this sort which many of the writers on credit have in mind when trying to explain and define credit. Thus we shall be able to discuss their assumptions and immediately eliminate certain misconceptions.

Running through most discussions of credit are two basic types of transactions: borrowing money (and its converse, lending), and acquisition of goods with the payment deferred.

Let us now examine more closely the business transacted by individuals. Suppose that we should witness Jones handing a watch to Smith. This is a physical exchange of an economic good. What economic relations may be established thereby? We shall have to assume that this is a new or primary exchange; for otherwise it may be that Jones is returning Smith's watch or using this means of settling some other obligation. Let us dismiss the possibility that Jones is making Smith a present of the watch. Here no economic relationship would exist between the two after the exchange, although there might be moral or sentimental ones.

There is a second possibility that Jones may be lending his watch to Smith. In that case he would want the same watch back. The loan is made on the basis of the lender's confidence in the borrower's good intentions to take care of the watch and his faith that it will be returned at the agreed time in good condition. Much has been made of these elements of confidence and faith in credit theories. (Appendices 1 and 2; see especially Wingfield-Stratford, Prendergast, Warburg, Baghot, Tregoe, Mill, Palgrave). But the existence of the elements of confidence, trust, faith or integrity need not require us to develop a special "credit theory". In order to answer such quantitative and qualitative questions as, "what volume of these transactions may exist at any given time?" or "when would a system composed of such relationships be sound?" we should not need a specialized economic theory to give the answer. We should, however, want to know what the legal foundations of the society were and what attitude the people took toward moral obligations. Such loans do not come under the category of credit transactions. While it is true that loans may involve credit every loan is not an extension of credit. *Nor is the essence of credit to be found in loans* (see p. 294 below). This distinction may be made clear by considering the case of an

individual who, though not indebted to a bank, is, nevertheless, in possession of a bank deposit (bank credit). He might lend this bank deposit to another, taking a mortgage as collateral, or purchasing a bond. Such loans may be distinguished from the process of extending credit, for the latter involves the further question of the origin of the bank credit.

Under a third assumption, Jones might be a retailer who has just made a sale. This certainly is an economic transaction and we shall be interested to know the terms of the exchange. If Smith gives Jones a twenty-dollar gold piece and the price of the watch is twenty dollars there has been an exchange of one economic good for another of equal value. The exchanged commodities presumably have the same purchasing power but the gold has certain characteristics that the watch has not. Smith particularly wants a watch; it will directly satisfy a need. The retailer probably has no special desire for the gold; he knows, however, that others will accept it willingly in exchange for other commodities. That is, it has general acceptability or what Anderson calls "a high degree of salability". According to this view an exchange consists of two sales, namely, a watch for gold and gold for a watch. The significance of this in credit or in economic theory is that, under a system of gold money in which all sales are made on the basis of immediate payment, the only purchasing power which could command goods would be that purchasing power residing in gold. Prices and the price level would be limited by the quantity of gold and its velocity of circulation.

Returning to the case under consideration, further light may be thrown on the nature of credit by noting that even in such obviously "cash" transactions, trust and confidence would play some part. If the dealer lacked facilities for assaying the gold, he would accept it in the faith that it was full weight and, likewise, the buyer, unless he were a special-

ist in watches, would have to repose some confidence in the dealer. It is impossible for us to know the qualities of all articles which we buy and in those cases where we are uncertain as to quality, we seek out a merchant who has a reputation for honesty.¹² The legal code is also important for the honesty displayed will depend in a measure on the provisions for punishing persons passing light-weight coins, or selling falsely represented goods.

However, if the transaction under review had taken place in the United States in 1933, it is unlikely that the buyer would have passed a gold-piece across the counter. He might have given one or more little printed slips of paper which on examination would have proved to be claims on the United States government or on some bank for a stated number of dollars. (It might also have been a gold certificate which was representative of twenty dollars in gold and the transaction, therefore, would have been the same as the previous one). We are not prepared at the present time to examine the full implications of this transaction, for although it would ordinarily be called a "cash" transaction, there is evidently something to be explained, for here is a buyer, settling a claim against himself by transferring a claim against someone else to the seller. How did these claims come into existence? How did they come into the possession of the buyer? How many of them are, or should be in existence? These questions cannot be answered at this point, but must wait until we have looked further into the existing methods of business. However, this transaction must in some way be related to the phenomenon of credit, for many of the writers have made reference to the canceling of claims

¹² Palgrave, *Dictionary of Political Economy* (London, 1919), p. 451: "The fundamental notion in credit, as the name itself implies, is trust or confidence, but this characteristic obviously needs limitation; for the buyer of an article must always repose some confidence in the dealer even when the transaction is for cash, and the practical rule is *caveat emptor*."

by transferring claims on others, (See Appendix I, especially, Anderson, Mill, Keynes, Hawtrey). It is also quite likely that the buyer might have transferred by means of a check a claim which he had on some bank. Except for the form, the character of this is substantially the same as that of the preceding settlement, namely, settling an obligation by transferring a claim on a third party. However, in both popular and economic parlance, the exchange would have been referred to as a "cash" transaction.

Or the case might have been one in which the seller handed the watch to the buyer who made no immediate reimbursement. That is, instead of giving another economic good, or a claim on a third person, he gave a claim on himself. This would fulfill most of the definitions of a credit transaction and will, therefore, bear close examination.¹⁹ We shall attempt to differentiate the various phases of this sale, namely, the credit, the basis of the credit, the transaction, the mechanism, and the instrument of credit or medium of exchange.

1. Elements of a Credit Transaction

Although an apparently simple transaction on the surface, this type of sale is basic in a credit economy and requires careful analysis in order to reveal the nature of credit.

When Jones handed Smith the watch a distinctive type of *transfer* took place in which Smith obtained (or had) the *power* or *privilege* of acquiring an economic good. Based on Jones's *confidence, trust* and *faith* in Smith's *ability* and *willingness* to pay at some time in the *future*, the *payment was*

¹⁹ "The general class of transactions, to which the name credit transactions has been applied may be roughly designated as transactions in which the consideration on one side, at least, is the assumption of a debt, running in terms of money (though not necessarily to be paid in actual money), payable either at a future time or at another place." B. M. Anderson, *op. cit.*, p. 472.

deferred. Smith gave his *promise* (in the form of a note or a debit on Jones's books) to pay and thereby assumed a legal obligation to do so. The note or book account acted as the immediate *medium of exchange*. The net result of the transaction was that Smith had the watch and a *debt*, and Jones had a *right to a future payment*. Since our task is to determine first of all the proximate genus to which credit belongs, it will be necessary to determine the unique feature of this sale. Each of the italicized characteristics has been offered, singly and in combination, as the answer. The unsatisfactoriness of these definitions lies in their incompleteness. We are always left with a question. Defining credit as a transfer coupled with a promise, or deferred payment, or a transfer in which no money passes, leaves the questions: "When may such transfers take place?" "How many of them ought to exist at any time?" In short, we are left with no criteria of analysis or control. These definitions do, however, describe a unique transfer, although it is in many cases not distinguished from a loan. James, in fact, while speaking of a sale of shoes which are to be paid for later, says, ". . . it is clear . . . that the seller is in fact lending the shoes to the buyer. . . ." ¹⁴ We have indicated above that the *unique feature of credit is not the loan*, because lending usually connotes the return of the specific article. In credit transactions the obligation is stated in terms of a money of account, which is in turn defined in gold under a gold standard or in other terms under other standards. The creditor is thereby put into a vastly different position. Thus a credit transaction involves a deferred payment stated in monetary terms. But why should the seller defer the payment?

To this question, several answers are offered. They point either to some undefined "power" which the buyer possesses

¹⁴ F. C. James, *The Economics of Money, Credit and Banking* (New York, 1930), p. 180.

or to the "faith", "confidence", or "trust" which the seller has in the buyer. The explanation is sometimes broadened to include "the whole of those economic and moral conditions". Again it is narrowed to the "personal honour", or the reputation of the buyer for "business integrity and ability". Something more definite is reached when the "resources" of the borrower, or "the reputation of the business, its property, and the rapidity and regularity of its cash turnover" are introduced.

2. Credit and Credit Instruments

Returning again to the transaction we observe that a note or other form of obligation was exchanged for a watch. The medium of exchange in this case was evidently the instrument creating the debt. Now some of the definitions of credit hold that credit itself is the medium of exchange, a substitute for commodity money. This is a confusion of terms which lies at the root of a great many of the disagreements on the subject of credit control. Obviously, a piece of paper carries in and of itself no power to command economic goods. In case it is the promissory note of the buyer it is obvious that its acceptability for this purpose must depend on other considerations which at this point we may call the credit of the maker. If he has given the promissory note of another, the same considerations obtain. In either case the primary problem of credit control takes the form of the question: "When and to what extent may these instruments, or media of exchange be created?" James says of credit documents: "These are tangible contracts which express definitely, and permanently, the nature of the credit contract which they enshrine, while credit is rather an intangible conception which is less readily perceived".¹⁶

¹⁶ James, *op. cit.*, p. 107.

3. The Basis of Credit

As pointed out above, a major difficulty in separating credit from the auxiliary features of the transaction lies in the confusion over *having* credit and *extending* credit. One side of the situation is set forth by Tregoe as follows: "This and the previous chapters have clearly set forth that in transactions on credit terms for the goods of the seller, or the money of the lender, there is exchanged the credit of the buyer or the borrower."¹⁶ On the other hand, business men and banks are constantly referred to as extending credit.¹⁷

When we get below the surface, it becomes evident that the buyer has exerted a demand for goods *based on his future income*. If the seller did not expect the buyer to have this income there would be no importance in "confidence", "trust" or "faith". Before the seller parts with the goods he wishes to be certain that the buyer will be able to pay at the designated time. This ability rests on the income or earning power of the buyer. It is true that explicit analysis of this income is not always necessary, but may be inferred from the reputation of the buyer. If a man has always met his obligations, it is assumed that he always will. He is left, in fact, to analyze his own credit. Transactions of the type which we are here considering, enable the buyer to make affective the purchasing power of future income. The amount of credit which an individual may exert as purchasing power is that portion of his future income which can be used in demanding goods in the present.¹⁸

¹⁶ Tregoe, *op. cit.*, p. 28.

¹⁷ "I *take credit* when I induce my creditor to consent to my paying a month hence what might be demanded today; and I *give credit* when I allow my debtor in the same manner to put off the liquidation of his debt." (Italics his.) Jevons, *op. cit.*, p. 233.

¹⁸ An example of this may be found in installment selling. During a period when the retail sales of the community are being changed from a cash basis to an installment basis, there comes into the market purchas-

Thus it is found that the unique and significant feature of the transaction is the introduction into the economic system of a distinct type of purchasing power. The existence of this purchasing power is the condition which gives the buyer the ability to command goods in the present in return for a promised payment in the future. But even possessing this purchasing power, the buyer must have also the reputation for honesty in meeting his obligations; that is, the seller must repose confidence and trust in him. Furthermore, the legal basis of the society in which he lives, will be influential in enabling the buyer to exert this future income in the form of present purchasing power. We shall, therefore, adopt "purchasing power" as the general category to which credit is to be assigned. The amount of purchasing power which this transaction introduces into the community is equal to the value of the goods exchanged. The potential amount which may be introduced is that portion of the buyer's total expected income which it is felt may safely be devoted to this type of purchase, when his other potential obligations are taken into consideration. As his income extends into an indefinite future, a time limit must be assigned. This period must obviously be limited to one for which future income can be fairly accurately estimated. A change in the degree of anticipation, adopted by a large number of business men, will alter the relationship between the demand and supply of

ing power heretofore ineffective. This additional credit or purchasing power strengthens the demand for commodities, and prices are therefore higher during the period of transition than they would have been had the system not been introduced. After the new wells of purchasing power have been opened, the demand then receiving no new re-enforcement tends to be more constant. However, if manufacturers misinterpret the increased demand and assume that sales are to increase indefinitely at the same rate, they are likely to expand their plants to meet them. This will leave them overcapitalized when the demand levels out. It is quite reasonable to suppose that this transition and aftermath are partly responsible for the expansion and depression in recent years in the United States.

goods during the period when such a change is being introduced.¹⁹ Mill gives some indication of this idea when he says, "The forms of credit which create purchasing power are those in which no money passes at the time, and very often none passes at all, the transaction being included with a mass of other transactions in an account, and nothing paid but the balance".²⁰ We have yet to see how the necessity of ultimately paying money is surmounted. This is the subject matter of Chapter III.

4. The Relation of Credit to the Value of Goods

Is, then, credit only that portion of the purchasing power of future income accruing to individuals which may be made available for current consumption? Several writers have indicated that credit depends on the ability of the individual to make effective the purchasing power residing in goods. (See Appendix I, especially Anderson and Goodliffe.)

To show the application of this concept to the transaction under consideration, we shall have to give our attention to the dealer and the business men who sell to him. Credit arises in this way only with certain kinds of goods and under certain conditions, for it is the function of the individual to consume goods since that is the purpose of production. Having consumed them, he cannot then use their purchasing power to command other goods. It is true that the individual does possess certain goods, and we shall return to this question later to discover which kinds of goods may be used to originate credit.

5. The Position of the Retailer after the Sale

Our retailer has parted with some of his inventory and in exchange has a claim on the buyer. If he must pay "cash"

¹⁹ The effect of this on prices is discussed in the conclusion to this chapter.

²⁰ J. S. Mill, *op. cit.*, vol. ii, p. 54.

for his purchases, he will be unable to replenish his stock unless he has further resources of his own. But it is the essence of a credit economy that purchases throughout the business system may be made on the basis of credit. Under some conditions it might be possible for the retailer to make further purchases from wholesalers or manufacturers by transferring to them the claim which he has on his customer. This might be accomplished by transferring to sellers a note which he had received from the buyer. He would thus be in a position to go on making further sales. Thus the amount of credit possessed by the retailer would depend on the value of the goods sold.

This, however, is not the way in which business is done. It is more likely that he would have debited his customer's account for the amount of the sale. The situation would be the same if the customer had given him a note, which is usual in installment sales. The important condition is that he have a provable claim on the buyer. He would then apply to the wholesaler or manufacturer for further stocks which were to be delivered on the basis of a deferred payment. Before making the shipment on this basis, his supplier would make a "credit analysis". The central problem of this analysis is that of determining the future cash income of the retailer in excess of liabilities to be met in the same period of time. In the early stages of this type of analysis great emphasis was placed on the dealer's reputation for honesty and ability, and the seller's confidence and faith in his customer. The effect of this, as we have seen, is to allow the buyer to make his own financial analysis. But in more recent times, sellers have required buyers to submit financial statements in order that they might themselves make an estimate of the buyer's financial condition. Naturally the buyer must still be honest and in addition have the ability to turn his potential income into actual income; that is, he must have

the ability to sell merchandise and collect bills. He must at the same time manage his business in such a way as to make the cost of doing these a minimum.

In order to simplify the situation, let us assume that our retailer does his business in "batches". That is, we shall assume that he buys a consignment of goods, sells them, and then buys another consignment. We must also assume that he has sufficient resources of his own to pay "cash" for the first "batch". After he has sold the first "batch" he will have claims on the buyers to the amount of the sales value of the first lot of his inventory and no debts. If the rule-of-thumb of two dollars of current assets to one of current liabilities is applied, he will be able to buy a second consignment approximately equal to the first, for after delivery of the second "batch" he would have accounts receivable to the amount of one lot, inventory for approximately the same amount (less his mark-up) and accounts payable for the inventory, or roughly one-half of the total of the accounts receivable and the inventory. Ordinarily the claims which the retailer has on his customers would not be transferred to the wholesaler or the manufacturer, but would be met by giving an independent claim on the retailer. Economically, however, the result is the same. The existence of the claim on the consumer has given the retailer the purchasing power necessary to command more goods. His ability to meet his obligation will depend on the ability of the consumer to pay. The wholesaler or manufacturer would in turn be able to make purchases on the basis of his claims on the retailer.

Does, then, the whole structure of credit rest on the future income of consumers? Suppose that all retail sales were made for "cash". Would credit then be nonexistent? Not at all. In beginning the analysis of this transaction it was stated that, for reasons to be pointed out later, transactions which involved the individual were not the best with which

to begin an analysis of credit. Owing to our selection of an installment sale as an illustration, undue emphasis has been placed on the future income of the consumer. This is but one manifestation of credit, which introduces purchasing power into the business mechanism.

Ultimately credit arises from the value of goods. The emphasis which has been placed on income is to some extent misleading, in the same way that the earlier emphasis on character, integrity, etc. has been. While the stress on income pushes the analysis one step further, income in the final analysis depends on the production of value, which in turn depends on the production of goods or services. At the risk of pushing the argument forward too rapidly, it might be pointed out that the value of goods and services depends upon their salability, these in turn on consumption, and this on the consumer's income and his disposition to consume rather than to own. This is true under a system of "cash" retail sales as well as under installment sales.

In order to make the point clear let us examine the business system which would prevail under conditions of "cash" retail sales in an attempt to identify credit as related to or arising out of goods. Let us assume that the retailer has obtained his inventory by purchasing it for "cash" out of his own resources. He will then be in a position to make further purchases as rapidly as he makes sales, thus keeping his inventory always at the same level. Probably he will not do this, but will instead wait until his inventory is somewhat depleted, and then make a larger purchase. This, under our assumption, can be made for cash. This would mean that during certain periods he would have on hand idle cash. But he would likewise have on hand the same amount of cash had he made his purchases on the basis of deferred payments, since he would have to accumulate it to pay off his obligations. But if he can obtain some of his goods without paying for

them immediately, he can do a larger volume of business on the same original investment. Those who supply him with goods can also increase their immediate sales by sending to him goods for which he does not have to pay immediately. The manufacturers can, in addition, maintain their production at a more steady level. Thus it is to their mutual advantage to introduce sales on the basis of deferred payment.

But how much can they send him? As in the case of the retail sales on installment payments, this will depend on his future income. This in turn depends on his sales. At this point we came back to the consumer who must be willing and able to buy the goods. It makes no difference whether we have in mind particular goods or goods in general.

The amount of credit introduced into the business structure will, therefore, depend on the amount of goods sold to the retailer on a deferred payment basis and the price at which they are sold. The volume of sales which can be made on this basis, or using the current phrase, the amount of credit which can be extended, depends on the amount of goods which can be sold at the price quoted. Thorough-going credit analysis then would not stop with the personal characteristics of the buyer, or with his income, but would ultimately rest on the salability of the goods out of which the credit arose.

If we should now turn to those enterprises which were supplying goods and materials to the manufacturer or wholesaler, we should find that these latter were obtaining goods from their sources of supply in much the same manner as the retailer who was selling on the deferred payment plan obtained his inventory. Thus the total quantity of credit in existence in the community at any given time would be equal to the quantity of goods sold on a deferred payment basis, multiplied by the prices at which the sales had been made. The soundness of this debt-credit structure would depend on the

eventual consumption of that volume of goods at the prices at which the debts were contracted.

Conclusions

This review of the nature of credit provides a basis for an attempt to re-define credit. As it has been our intention in this chapter to investigate the nature of the supply of purchasing power which may affect prices, some corollaries of our definition are given to show its bearing on "monetary" theory.

Our conclusion is that *credit is that portion of the estimated purchasing power of goods, stated in terms of a money of account, which may be used to acquire other goods without resorting to barter.* The effect of credit on prices is thus seen to depend on changes in the following factors:

- (1) the willingness of those in possession of credit to use it
- (2) the willingness of others to recognize the existence of such credit
- (3) the estimate of the exchange value of the goods involved
- (4) the portion of such exchange value which is customarily permitted to be exerted as a demand for other goods
- (5) the kinds of goods on which credit is based
- (6) the length of time for which payment may be deferred

As corollaries of the above definition, the following may be added:

- (1) what is currently referred to as "extending" or "giving" credit is in reality recognition of the credit or purchasing power of the "debtor"
- (2) he who acquires present value in exchange for a promise of deferred payment has used *his* credit
- (3) the basis of credit is goods
- (4) there is no simple or definite relationship between the quantity of credit which may be used and the quantity of gold

X6:75
G3

- (5) the community is freed from the limitations on purchasing power imposed by the supply of a commodity money
- (6) the amount of purchasing power in a community does not depend on the quantity of credit instruments
- (7) the quantity of credit instruments in existence depends on the amount of credit which has been extended for they are the legal evidence of the obligations thereby incurred
- (8) the amount of credit instruments is more significant as a measure of the purchasing power which has already been exerted than as a measure of that which may be used.

Further, the extension of credit may be differentiated from a loan. A loan may be a transfer of goods or money from one individual to another. If the loan is a transfer of money, no additional purchasing power is introduced into the economic system, since the lender's purchasing power is reduced by the amount by which the borrower's is increased. When credit is extended, the buyer's purchasing power is increased without decreasing that of the seller. In fact, the purchasing power of the latter may be thereby increased if others estimate his credit more highly because his sales are apparently increasing. This is one of the important processes at work in a period of expanding business and rising prices. As purchases on credit increase, the resulting sales lead to higher estimates of the values of goods, the higher estimated values to more credit, and the increased purchasing power to higher prices. The resulting "boom" may be brought to an end when the values of goods are tested by sale for consumption or ownership and are found to have been overestimated. A process of cumulative contraction may then begin.

A few authors have suggested that a sale "on credit" might be viewed as a loan of goods. The unsatisfactoriness of this analogy lies in its omission of two of the important

characteristics of a credit transaction. In the first place, when a credit transaction takes place, the goods are valued in terms of a money-of-account. Secondly, an obligation to pay a sum of money is incurred, and the relationship of the buyer and seller is thereby complicated.

The significance of these conclusions in the theory of credit control lies in the direction which it gives to the approach to the subject. The central problem becomes the estimation of the values of goods. The ancillary problems revolve about the kinds of goods which may be made the basis of credit, the proportion of their estimated values which may be used as purchasing power, and the time for which payment may be deferred.

Before these problems can be treated adequately, the second important requirement of a credit economy must be discussed. This is the mechanism by which the ultimate settlement of debts by the transfer of money is avoided. Thus far we have merely shown that in a credit economy goods may be purchased by giving to the seller a promise to pay money at some future time. In a fully developed system the payment of a commodity money (or other legal tender) is seldom necessary. Debts are settled by transferring other debts, final liquidation taking place through the cancellation of debts between mutual debtors and creditors. Full distinction has not always been made between this process and the use of credit. It is conceivable that business might be done on credit, with each obligation finally settled by the payment of legal tender. Such use of credit would not restore trade to a "system of perfected barter", nor would it permit "exchange of goods without the use of money". It is therefore necessary to study the credit system as distinct from credit.

The mechanism of cancellation is provided by the banking system. Because of the use of bank credit as "money" or "cash" by the community, its control is peculiarly important.

The study of bank credit also involves the study of the relationship between credit and the standard of value, or standard of deferred payment. As a result of the study of this mechanism, we are able to view more clearly the nature of the demand for gold (or bank reserves). Furthermore, the control of bank credit is important because the use of other forms of credit may be either impeded or encouraged by the operation of the banking system. In the following chapter, the functions of banking in a credit economy are presented. Chapter IV deals with the conditions which may be expected to result from the improper extension of bank credit. The control of bank credit thus requires the development of criteria by which such conditions may be recognized and action based on these criteria may be designed to avoid or correct them.

APPENDIX I

DEFINITIONS OF CREDIT

The definitions of credit have been separated into two broad groups, the first of which is presented below. This group is characterized by an attempt to state what credit is. The second group is a selected list of statements of what credit does.

In compiling these definitions, the lists given by other authors have been relied upon. Principal among these are Willis and Edwards, *Banking and Business*, p. 511, and Prendergast, *Credit and Its Uses*, pp. 8-11. A title in parentheses indicates that the definition has been quoted by that author.

Isolated passages such as the following may not represent adequately the views of the author quoted. We apologize for any misconceptions which may thus be conveyed. Since it is not our purpose to write a history of credit theory, statements expressing typical views have been taken from passages in which they are clearly stated.

Credit is an Attribute of Borrowers and Buyers:

"Credit may be defined as the business equivalent of personal honor." Max M. Warburg, *Credit as a Factor in Business and State Finance*, p. 3. An address delivered before the German Association for Industry and Commerce, June 22, 1927.

"Essentially credit seems to be a condition which enables a person to extend his control, as distinct from his ownership, of resources." F. Lavington, *The English Capital Market*, p. 15.

"Credit may be defined to be an economic quality arising out of a business as a going concern, and proportional in amount to the reputation of the business, its property, and the rapidity and regularity of its cash turnover." Wilbur Aldrich, *Money and Credit* (Prendergast).

"Credit is a power to borrow." Millicent G. Fawcett, *Political Economy for Beginners*. (Prendergast).

"Credit may be defined as the power to secure commodities or services at the present time in return for some equivalent

promised at a future time." C. J. Bullock, *Introduction to the Study of Economics*. (Prendergast).

"Credit is the power to command goods without immediate payment." R. E. Curtiss, *Economics, Principles and Interpretation*, p. 295.

"In its economic and business sense credit means the power to obtain present goods or services in exchange for a promise, implied, oral, or written, to perform some act in the future, usually the payment of money." James B. Trant, *Bank Administration*, p. 137.

Credit is an Attitude of Sellers and Lenders:

"Credit, as the name implies, is nothing more nor less than faith, and faith, on the stock exchange no less than before the altar, is the substance of things hoped for, the evidence of things not seen". Wingfield-Stratford, *History of British Civilization*, vol. iii, p. 651; (F. C. James, *The Economics of Money, Credit, and Banking*, p. 107).

"The whole of those economic and moral conditions because of which men consent to make payments in the present on the promise of repayment in the future." Ferrais, (Willis and Edwards).

"Commercial credit may be defined to be that confidence which subsists among commercial men in respect to their mercantile affairs." Henry Thornton, *An Inquiry into the Nature and Effects of the Paper Credit of Great Britain*. (Prendergast).

"Credit is the confidence felt in the future solvency of a person, which enables him to obtain the property of others for use as a loan, or for consumption." Nasse. (Willis and Edwards).

"Credit is the confidence that is reposed in the ability and purpose of men to meet future obligations." W. A. Prendergast, *Credit and Its Uses*, p. 8.

"Commercial credit is the name of that trust which is reposed in men because of their character and resources." Frederick B. Goddard, *Giving and Getting Credit*. (Prendergast).

"Credit—the disposition of one man to trust another—is singularly varying." Walter Bagehot, *Lombard Street*. (Prendergast).

"Credit is a privilege, extended by the seller to the buyer, entitling the latter to the use of money, commodities, or services, for a period of time, based upon confidence in the buyer's ability and willingness to pay a definite sum of money, or its equivalent, at the expiration of the specified period." Robert Young, *Industrial Credits*, p. 4.

"It seems strange that there should be any need to point out, that credit being only permission to use the capital of another person, the means of production cannot be increased by it, but only transferred." J. S. Mill, *Principles of Political Economy*, vol. ii, p. 50.

Credit is an Attribute of Goods:

"Private Credit—the exchange-value of an individual's property, . . ." W. Goodliffe, *Credit and Currency*, p. 16.

"It was, and is now, the degree of fitness of a commodity to satisfy a felt need or requirement, which constituted the abstraction, which in economics we now style 'value', or in the process of exchange, 'credit' if expressed in terms of money." *Ibid.*, pp. 1-2.

Credit is a Type of Exchange

"Credit is machinery invented to aid in accomplishing the purposes of capital." J. L. Laughlin. (Prendergast).

"Credit is a transfer of goods for a promised equivalent." R. T. Ely, *Outlines of Economics*. (Prendergast).

"Credit is that private economic exchange, or that voluntary giving and receiving of economic goods between different persons, where the service rendered by the first is performed from his confidence in the assurance given by the second that he will render a recompense at a future time". Wagner (Willis and Edwards).

"Exchange in which one party renders a service in the present, while the return made by the other falls in the future." Knies (Willis and Edwards).

"Credit is the exchange of an actual present good against an equivalent which one engages to furnish within a certain period." Leroy-Beaulieu (Willis and Edwards).

"The exchange of an actual reality against a future probability." Levasseur (Willis and Edwards).

"Credit may be said to be an exchange or a transaction which consists in the temporary transfer of the usance of wealth." E. R. A. Seligman, *The Economics of Installment Selling*, p. 3.

"The practical current definition to be given to credit should be that of exchange in which no money passes, or as a form of exchange which is conducted without the use of money." Willis and Edwards, pp. 9-10.

"An unique term then, to which credit is reduced, is the economic promise, and more specifically, the promise of guarantee." Taylor, *The Credit System*, p. 52.

"When we analyze its nature, however, credit is found to be nothing but the deferring of a payment." W. S. Jevons, *Money and the Mechanism of Exchange*, p. 233.

"Credit is a promise to pay gold or legal-tender paper currency." L. D. Edie, *Money, Bank Credit and Prices*, p. 5.

"We may distinguish credit transactions from credit, defining credit as the volume of debts, and credit transactions in which the debts are passed in exchange." B. M. Anderson, *The Value of Money*, p. 473.

"Bank-credit is the debt of responsible institutions, payable on demand in money." *Ibid.*, p. 489.

"Bank-money is simply an acknowledgment of a private debt, expressed in the money-of-account, which is used by passing from one hand to another, alternatively with money-proper, to settle transactions." J. M. Keynes, *Treatise*, p. 6. While Mr. Keynes does not use the term credit in this definition, it is evident that he means bank credit for he does not discuss credit as distinguished from "bank-money."

"Credit is the lending of capital." Walras. (Willis and Edwards).

Miscellaneous

"In considering credit as a science. . . ." W. A. Prendergast, *Credit and Its Uses*, p. 5.

"Credit as a substitute for money." J. S. Mill, *op. cit.* heading of ch. xi, bk. iii.

"Credit is the present right to a future payment or credit is, therefore, the right or property of demanding something from some one else. It is the right to a *future payment*; it is the name of a certain species of right or property. Gold and silver money may be called metallic credit." H. D. MacLeod, *The Theory of Credit*. (Prendergast). (Italics from the original.)

"We have now explained the real nature of credit, and shown that it is the name of a species of incorporeal Property, which in Law, Commerce, and Economics, and in common usage is also called a Debt." MacLeod, *The Theory and Practice of Banking*, vol. i, p. 200.

"The credit which we are now called upon to consider, as a distinct purchasing power . . ." J. S. Mill, *op. cit.*, vol. ii, p. 54.

"Bank credit is, however, nothing but a fund of purchasing power and, as we have already observed, the commercial banks create the greater part of that purchasing power." F. C. James, *op. cit.*, p. 223.

FUNCTIONAL DEFINITIONS OF CREDIT

Credit Facilitates Trade:

"It is the function of credit to 'coin', so to speak, rights to goods on shelves, land, etc., etc., into liquid rights, bearing the dollar mark, which are much more highly salable than the rights in their original form were, and which often become as salable as money itself, functioning perfectly as money." Anderson, *op. cit.*, p. 475.

" . . . one chief function of modern credit is to increase the *salability of goods*, and to enable men to use the value of their goods in effecting exchanges without actually alienating their property in the goods." *Ibid.*, p. 407. (Italics his).

"The values of goods are estimated and expressed in terms of gold, which acts as the common denominator of value, but

metallic money ceases to be the medium of exchange. The banking organization effects what I have heard Mr. W. Langton describe, as a restoration of barter." Jevons, *Money and the Mechanism of Exchange*, p. 282.

Credit Provides a Medium of Exchange:

"Credit supplies in fact . . . a species of medium of exchange, and logically the mere exchange of products or instruments is quite different from the actual increase of commodities." Palgrave, *Dictionary of Political Economy*, p. 451.

Credit Defers Payment:

"When a commodity is transferred by its maker or owner to another trader, but without any direct payment, the transaction is said to involve credit; and a credit transaction may be defined as an uncontrolled or deferred exchange or as an exchange not yet closed." Willis and Edwards, *Banking and Business*, p. 7.

"A credit transaction is one which involves a delay or postponement of final payment, such as buying goods and paying for them at the end of the month or borrowing money to form a corporation." Magee, *An Introduction to Money and Credit*, p. 14.

"The essential characteristic of credit is the *immediate acquisition of something in return for a promise to pay in the future.*" James, *op. cit.*, p. 108. (Italics his.)

Credit is a Means of Settling Debts:

"The practice which we have attributed to the dealers of setting off one debt against another may be described as the use of credit as the means of payment." Hawtrey, *Currency and Credit*, p. 3.

"It is clear, therefore, that in the process of exchanging its own credit for that of a borrower, the bank has monetized credit. *It has created purchasing power which did not exist before*, since it has supplied the borrower with a means of paying his debts, without in any way reducing the amount of money in the hands of the other members of the community." James, *op. cit.*, p. 195. (Italics his.)

Credit Assists in Directing the Flow of Capital:

“The public recognition of business integrity and ability which is the basis of credit is then a very important means of promoting the free flow of capital in the direction required by public interest.” Lavington, *The English Capital Market*, p. 15.

“Credit is machinery invented to aid in accomplishing the purpose of capital; if an essential function of capital is to discount the future, the essential characteristic of credit is the element in it of futurity.” J. L. Laughlin, *Credit*. (Prendergast).

“As the confidence on which credit is grounded extends itself, means are developed by which even the smallest portions of capital, the sums which each person keeps by him to meet contingencies, are made available for productive uses. The principal instruments for this purpose are banks of deposit.” Mill, *op. cit.*, vol. ii, pp. 51-2.

APPENDIX 2

THE BASIS OF CREDIT

Credit is Based on Gold:

"It is well then to state, in the most emphatic manner, that the whole of this vast superstructure of credit must rest on a metallic basis, and if this basis is cut away, the whole structure would fall." Nicholson, *Treaties on Money*, p. 74.

"Bank credit is based on *gold*." Tregoe, *op. cit.*, p. 71. (Italics his).

"But we must never forget that all the figures in the books of a bank *represent gold*, and every creditor can demand the payment of the metal." Jevons, *op. cit.*, p. 303. (Italics mine).

Credit is Based on Goods:

"Being composed chiefly of credits granted upon the discount of commercial paper, they (bank deposits) do not spring from gold or silver, they do not turn into gold or silver, they do not represent gold or silver: if they may be said to represent anything, it is the value of the merchandise, the sale of which upon credit has given existence to the mass of both bank-notes and bank credit." Colwell, *op. cit.*, p. 246.

"The real basis of the value of a mortgage is not a particular sum of gold, but rather the value of the farm expressed in terms of gold. The basis of a bill of exchange is not a particular sum of gold, but rather is the value of the goods which changed hands when the bill of exchange was drawn, supplemented by the other possessions of drawer, drawee, and the endorsers through whose hands it has gone." "Even a note unsecured by a mortgage, or not given in payment for a particular purchase, is based, in general, on the value of the general property of the man who gives it, and on the value of his anticipated income." Anderson, *The Value of Money*, pp. 326-7.

"Since every credit derives from an asset, the possessor of an asset possesses a credit limited to the exchange value of his asset, but unless there exists a market for the asset, the credit will be potential only." Goodliffe, *op. cit.*, p. 13.

"The main staple out of which credit is made is vendible

goods, and the extension of credit must be attributed mainly to a growth of the vendible goods which can be used for making it".

J. A. Hobson, *Gold, Prices and Wages*, p. 73.

"The debt or credit is either the consideration for goods already sold, or services already rendered, or it is an anticipation of the proceeds of future sales or future services." Lord Farrer, (Hobson, *op. cit.* p. 73).

"To the extent to which the modern method is adopted, the granting of credit ceases to be a highly personal transaction, depending upon the relationship between the two parties and subject to psychological attractions and prejudices. Instead, it tends to become a routine process, by which an individual automatically receives credit when he shows himself to be the owner of certain kinds of property, and can demonstrate that he desires to use the credit in some acceptable economic undertaking." James, *op. cit.*, p. 113.

"The *values of goods* are estimated and expressed in terms of gold, which acts as the common denominator of value, but metallic money ceases to be the medium of exchange." Jevons, *op. cit.*, p. 282. (Italics mine).

Credit is Based on Personal Qualities:

"Many years of survey and research in the credit field have not revealed to the writer a more comprehensive description of the *credit content than a 'Human power'*". Tregoe, *op. cit.*, p. 17.

"In other words, it is an *estimate of ability and disposition to fulfill business engagements*, which confers purchasing power; power to command the industry or capital of others." Frederick B. Goddard, *Giving and Getting Credit*. (Prendergast, p. 11). (Italics mine).

"As the confidence on which credit is grounded extends itself." Mill, *op. cit.*, vol. ii, pp. 51, 52.

"The fundamental notion in credit, as the name itself implies, is *trust or confidence . . .*" Palgrave, *op. cit.*, p. 451. (Italics mine).

"Credit is a privilege, . . . *based upon confidence* in the buyers' ability and willingness to pay a definite sum of money,

or its equivalent, at the expiration of the specified period." Robert Young, *Industrial Credits*, p. 4. (Italics mine).

"The public recognition of *business integrity and ability* which is the basis of credit is then a very important means of promoting the free flow of capital in the direction required by public interest." Lavington, *op. cit.*, p. 15. (Italics mine).

Credit has a Tangible and Intangible Basis:

"Very early in the evolution of credit it became apparent that it originated in a transfer of goods; that credit was given to a buyer, who had no standard money, solely on the basis of the belief in his ability and willingness to pay in the future, and this personal obligation was usually converted into an impersonal, legal means of enforcement. From the beginning it was clear that credit was not dependent on, nor limited by, money. . . . The credit was given not because of any money either the seller or buyer had, but because the debtor who received the goods sold was expected to make such use of them . . . that he would have goods, or their equivalent in his possession at maturity sufficient to meet his obligation, . . . The only link with money would be the possibility or impossibility of the debtor exchanging his own salable goods when he was ready to pay at maturity into legal money." J. L. Laughlin, *Money, Credit and Prices*, vol. ii, p. 7.

". . . that credit is the natural sequence of man's desires to avail himself of the use of certain species of property; and for the repayment of *this* property in its original or equivalent form, he *utilises certain elements of both tangible and intangible character* to induce the owner to part with his property to him." Prendergast, *op. cit.*, p. 7 (Italics mine).

"Credit resides in the borrower and is made up of *character, capacity, and capital*." Tregoe, *op. cit.*, p. 21.

"The elements composing credit are *spiritual and material*." Tregoe, *op. cit.*, p. 17.

"Credit may . . . be defined to be an economic quantity arising out of a business as a going concern, and *proportional in amount to the reputation of the business, its property, and the rapidity and regularity of its cash turnover*." Wilbur Aldrich, *Money and Credit*. Prendergast, p. 10).

APPENDIX 3

CLASSES OF CREDIT

- I. Willis and Edwards, pp. 13-14
 - A. a. Personal
 - b. Commercial
 - c. Mercantile
 - d. Bank
 - e. Public
 - B. a. Short-term or commercial
 - b. Intermediate or productive
 - c. Long-term or investment
- II. James, pp. 113-116
 - A. a. Long-term
 - b. Short-term
 - B. a. Secured
 - b. Unsecured
 - C. a. Public
 - b. Mercantile
 - c. Personal
 - d. Bank
 - e. Construction
 - D. a. Investment
 - b. Commercial
 - c. Consumptive
- III. Tregoe, p. 27
 - A. Public
 - B. Private
 - a. Investment
 - b. Bank
 - c. Commercial
 - d. Individual
- IV. Seligman, p. 141
 - A. Producers
 - B. Consumers

CHAPTER III ¹

THE NATURE OF BANKING

Introduction

THE theory of the value of money presented in Chapter I centered about the analysis of the supply of and the demand for money. The supply has been discussed in the preceding chapter. There it was shown that "the supply of money" is not limited to a commodity money or to the supply of media of exchange. It consists, rather, of the purchasing power of economic goods which can be made effective as a demand for other goods without barter. This being true, it would seem unlikely that the level of prices, taken as the measure of the "value of money", would be directly affected by changes in the supply of a commodity money or the supply of credit instruments. Changes in the price level appear to be more intimately related to the willingness and ability of the members of the community to use their credit.

Turning to the concept of the "demand for money" we find that it involves three aspects; first, the demand for a medium of exchange, then for a generally acceptable medium of exchange, and finally for gold. The first of these need not detain us, for as we have seen, this demand is easily met by the creation of credit instruments in the form of promissory notes, acceptances, or book credits. The demand for generally acceptable media of exchange is met by the banks which provide notes and credits on their books

¹ It is recommended that the Appendix to this chapter be read before proceeding with the text.

(deposits). It will be our purpose in this chapter to examine this process in detail. It is the feeling of the author that the third aspect, namely, the demand for gold, has been inadequately treated in monetary theory. But in order to appreciate its origin and significance, it is necessary to understand the nature of bank credit and the mechanism of the banking system. The changes which occur in the demand for gold as a result of the extension of bank credit will be discussed in the following chapter.

The Functions of Banking

There are two essential characteristics in every system of credit. The first is the use of the purchasing power of goods to command other goods. This results in an obligation stated in terms of the money of account and embodied in a credit instrument. The second characteristic is the creation of some mechanism for offsetting these debts against one another, thus making resort to a commodity money unnecessary. The service which the commercial banks perform lies in the facilitation of these two processes. The first of these services they perform by making individual credit more generally acceptable by substituting their own liabilities for those of the individual. The second they accomplish through the system of clearance. The problem of credit control thus requires a study of the conditions under which banks may recognize and generalize business credit so that complete clearance will take place.

1. The Recognition and Generalizing of Credit

Attention will be directed first to the fundamental banking operation of the recognition and generalization of credit. Obligations are thereby established in the form of bank deposits or notes. These, once established, are transferred from person to person in the community as true representa-

tives of economic purchasing power or money. It is, therefore, of utmost importance that the estimates of the credit on which they are based be as accurately made as possible. This is necessary not only for the solvency of the individual bank, but for the general welfare of the economic community. When we analyze the conditions under which banks are willing to create these claims against themselves, we are again confronted with the problem of the nature of credit. If it is granted that the bank exchanges its promise for the promise of the borrower, the question becomes one of the conditions under which the banks are willing to accept the promises of others in exchange for their own. This may be answered simply, by saying that it has faith, trust, or confidence in the individual. But we have seen that this is unsatisfactory. It is necessary to be assured of the future income of the borrower, and this will depend on his ability to earn a future income either by rendering services or producing and selling commodities successfully.

Examination of some types of bank loans reveals the attempts of banks to secure a close relation between goods and credit. This is particularly true of "commodity loans". Whenever the basis of the loan is a trust receipt, a warehouse receipt, or shipping documents, the relationship is especially direct. The discounting of a documented trade or banker's acceptance is another example of the banking process of making available, as purchasing power, the value of the goods which a merchant or manufacturer has recently sold. In the case of a banker's acceptance it is the discounting bank, rather than the accepting bank which extends the credit. The accepting bank merely adds to the strength of the promise.

The so-called "unsecured" loan is no less based on goods. In making such loans, the banks exert effort, through the analysis of balance sheets, to determine the

amount of salable goods on hand or claims which have arisen out of previous sales. The emphasis on the traditional banking triumvirate of "character, capacity, and capital" neatly summarizes part of the credit problem. The possession of capital (working capital in the form of inventory) lays the foundation for the payment of the obligation, capacity assures the ability to use the capital effectively, and character closes the cycle by providing the honesty and integrity necessary to pay the debt when due. Laws to some extent replace character, but since laws may be circumvented, character is still essential.

Real estate and securities are two additional bases commonly provided by borrowers as the source of their credit. One in the possession of either of these has an economic good. The purchasing power in these forms, however, is not readily available. It can be made available by pledging them against a loan, but if the loan is to be made by a bank, the securities or real estate (or any form of fixed capital) must be the stock in trade of the borrower. That is, they must be intended for sale. During the period of the loan, they must be acquired by a buyer out of his current or accumulated income, or someone else's current income or accumulated purchasing power.²

The banks thus provide the community with a generally acceptable medium of exchange, or "money". The amount of credit which they can extend will depend on the volume of exchangeable goods which "business" is producing. If the goods on which these credit instruments are based actually enter into exchange, the obligations which they bear to pay gold (or other forms of legal tender) will not have to be fulfilled, for liquidation will be effected by clearing them

² The reader is referred to chapter x for a full discussion of securities and real estate as bases for the extension of bank credit. Full allowance is made there for the distinction between collateral and purpose.

against one another. When the values of the goods are overestimated, payment will have to be made by the issuing bank or banks out of reserves. Thus the test of correct credit extension is found in the proportion of its obligations which a bank must meet out of reserves.

2. Offsetting Debts

The second function of the banking system, namely, offsetting debts, or facilitating exchange without the use of money, may be more clearly presented in the form of a schematative diagram. The qualifications necessary for security and real estate loans will also be more evident. It is impossible to make such a diagram complete, for to do so would require charting the whole of economic society. After it had been completed in this manner it would be too complicated for use.

The chart on page 86 represents the flow of a "batch" of goods from the raw material stage to the consumer.³ Let us assume that the "extractor" (one engaged in an extractive industry) has claim to sufficient wealth, either his own or borrowed, to equip his business and produce and sell the first batch of goods.⁴ If the sale had been for cash, he would be in a position to produce a second "batch" by hiring more labor and buying additional supplies. How-

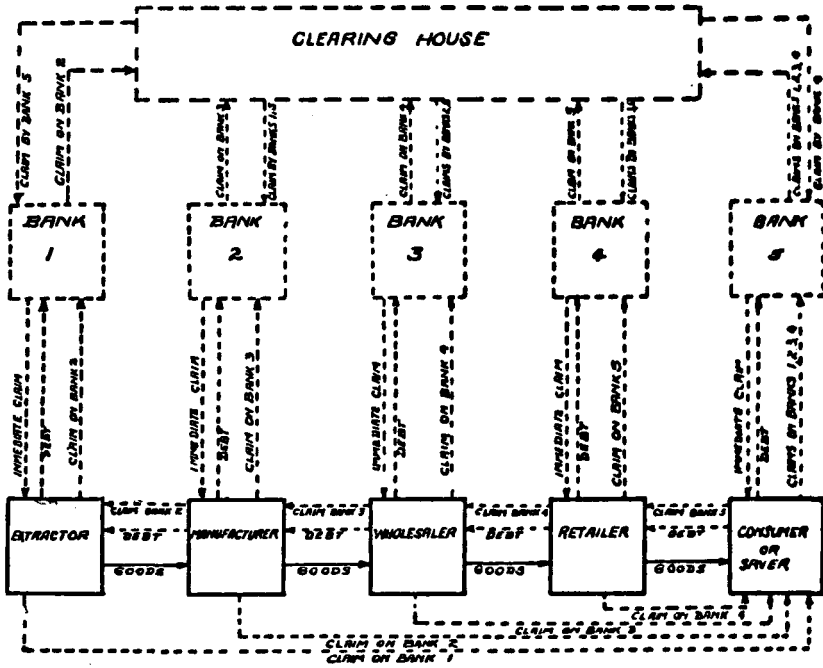
³ A similar discussion will be found in Keynes's *Treatise on Money*, vol. i, ch. x.

⁴ This is the usual case. The emphasis placed by banks on the annual "clean-up" of customers' debts is an evidence of this. Witness also statements by writers on credit, such as Phillips:

"A clothing merchant proposes to set up in business. He expects to carry a stock of goods worth on the average about \$25,000. If he, without capital of his own, should make application for a bank loan of that amount, the application would in all but the most exceptional cases be refused, because the banker, who handles chiefly the funds of others, cannot advisedly place those funds where so large a risk would obtain." C. A. Phillips, *Bank Credit* (New York, 1916), pp. 4, 5.

ever, let us assume that he does not receive cash but a claim on the buyer who is represented in the chart by the "manufacturer". This transaction is indicated by the arrows labeled "goods" and "debt". This debt may be embodied in a promissory note, a trade acceptance, a bank

CHART 1
THE EXCHANGE OF GOODS AND DEBTS



acceptance, or an open book account. We have seen above the difficulties encountered in attempting to acquire further goods and labor by transferring this claim or creating a new one on himself. The next step, therefore, is to obtain a claim on a bank, either by discounting the claim on the

“manufacturer” or by creating a new one on himself by borrowing from the bank. In order to do this on an “unsecured” basis, evidence of the claim on the “manufacturer” would be given in a financial statement. The essence of this transaction is that the “extractor” receives an immediate claim on the bank in exchange for the bank’s deferred claim on him. We shall see later how it is possible for the bank to make a promise to pay gold immediately in exchange for someone else’s promise to pay at some future time. The usual explanation is that the bank has funds of depositors which it lends out. This is not the case. Usually the length of time for which the bank will defer the “extractor’s” payment depends on the period for which he must wait for the “manufacturer’s” remittance. This will in turn depend on the length of time it takes the “manufacturer” to sell. The amount of credit involved will be determined by the volume of goods sold by the “extractor” and the price at which the contract was made. The bank has thus placed the “extractor” in the position of exerting immediate purchasing power to the amount of the goods which he has sold. It has, in the words of Willis and Edwards, “recognized his right to credit”.⁵ It has recognized his right to command the goods and services of other members of the community by virtue of the value which he has created. Furthermore, it has “guaranteed” this credit by substituting its promise for his. This credit has arisen out of the value which he has produced in the form of goods and not out of his character, or the bank’s faith, confidence, or trust in him. It has not created this purchasing power out of nothing, as some writers have claimed.⁶ What it has created is a credit instrument, based upon the credit of the producer.

⁵ *Banking and Business*, p. 20.

⁶ Atkins, *et al.*, *Economic Behavior* (New York, 1931), preface, p. x.

It may be pointed out that banks sometimes extend credit on the basis of salable inventory as well as on receivables. In these cases, the sale and resulting receivable is anticipated. Such loans involve a greater degree of risk, for the value of the goods is not certain. A sales contract is necessary to transform this value into a promise to pay a definite amount of gold. This uncertainty is recognized in the practice followed by many banks of "scaling down" the value of inventories appearing on balance sheets.

The immediate claim which the "extractor" has on Bank 1 is used to pay wages, dividends, interest on bonds, and to acquire supplies. For the sake of simplicity we have omitted those payments made for supplies. This can be done without serious error, for if followed far enough, every claim on Bank 1 would eventually get into the hands of some member of the community in the form of a wage, salary, dividend, or interest payment.⁷ These people are also the consumers and savers represented by the rectangle at the lower right hand corner of the diagram. "Saver" is used in the sense defined by Keynes.⁸

A further assumption involved in this diagram is that there are no corporate surpluses but that the decision as to the volume of saving and consuming is left to the individual and that corporate expansion takes place through the issue

⁷ For an expression of a similar concept, *cf.* the following:

"All this capital in turn is paid away as wages, salaries, dividends, rents, royalties, etc., and goes round in a regular stream to the retail market where the reservoir is tapped". O. St. Clair, *The Physiology of Credit and of Money* (London, 1919), p. 70.

"Thus each individual in the community contributes to the commodity income either his own labour, mental or manual, or the service of some thing or things belonging to him, and thus does he obtain the cash equivalent of the same, or money income, which he can take round to the retail market and exchange for his share of the commodity income". *Ibid.*, p. 68.

⁸ Keynes, *op. cit.*, vol. i, p. 126.

of bonds and stocks. The theoretical and practical significance of this assumption will be discussed later.

The situation represented by the diagram at this stage of the analysis is as follows: the "manufacturer" is in possession of the goods, he is indebted to the "extractor" for their value stated in gold, the bank is indebted to a group of people in the community for approximately the same amount, and the "extractor" is indebted to Bank 1. The claims on the bank are *immediate* claims to gold (deposits and notes), while the debts of the "extractor" and the "manufacturer" are *deferred* promises to pay gold.

The next step in the sequence of events is the sale of the goods by the "manufacturer" to the "wholesaler". After the former has made this sale, he is in a position to borrow at the bank in the same manner and under the same conditions as does the "extractor". This claim on Bank 2 is then passed on to the "extractor" to settle the debt. He in turn pays off his debt at Bank 1 by depositing the check on Bank 2. The "manufacturer" also uses part of the claim to pay wages, dividends, and interest. In a similar way the transactions involving the "wholesaler", "retailer", and "consumer" follow. The chart provides banking facilities for the consumer who is thus able to make future income effective for present purchases. In most cases at the present time, intermediary institutions bring the bank and the consumer together, but the net effect is the same as if the consumer went directly to the bank.

If the sequence of events is studied closely, it will be seen that there is in existence at any given time an amount of bank credit equal to the value of goods in circulation. The length of time during which the credit is in existence depends on the length of time which the total of the manufacturing and marketing processes require. Therefore the total volume of bank credit in existence at any time will be de-

terminated by the amount of circulating capital in the community, its price, and the length of time required by the producing and selling processes. If one assumes that the solid squares represent a physical volume of goods at various stages of production and marketing, and the dotted squares a volume of bank credit equaling the value or purchasing power of the goods, it follows that the bank credit moves along with the goods, but at one stage removed. That is, the bank of the "extractor" is financing the goods while they are in the hands of the "manufacturer", and Bank 2 is financing them while they are in the hands of the "wholesaler", etc. When Bank 2 takes up the loan Bank 1 is relieved of the burden by the check or claim on Bank 2 which the "extractor" gives to it in settlement of his debt. This concept does not allow for the growth in the value of the goods as they pass through the various stages, but this need not invalidate the analysis as we shall see below.

Let us turn our attention to Bank 1. In extending credit to the "extractor", it has obligated itself to make immediate payments of gold to the amount of the loan. In exchange it receives his promise to pay gold at a future time. But we have seen that the "extractor", and the others listed in the lower row, do not intend to make their promises good in actual gold. Their debts to the banks are liquidated by giving claims on other banks which they receive from their customers. Nor will it be necessary for the banks to make their promises good in gold if all goes well.

The immediate obligations which Bank 1 has agreed to meet will be presented to it by banks such as Number 5. These will usually be presented through a clearing house. The immediacy with which they are presented will depend first of all on the rapidity with which the "extractor" draws checks. It will further depend upon the length of time required by the clearing process. Nevertheless, within a

reasonably short time after it has extended credit to the "extractor" the bank will be presented with demands to pay gold. But it must be remembered that the extension of this credit will eventually bring in claims on other banks to an exactly equal amount. Therefore, if this were the only transaction into which the bank entered, it would lose gold at approximately the time it made the loan, and receive gold when the loan was repaid. Practically, however, this need not occur, for in so far as other banks are engaged in the same type of operations, there will be a smooth flow of claims in both directions. Therefore if the bank has claims coming into it on other banks at the time it makes this particular loan, the claims will offset each other and the bank will not need to pay out as much gold or to receive as much gold as before. If the claims are equal, clearance will be perfect and there will be no movement of gold between the banks. When a bank is in full operation, its incoming payments will also include the repayments of previous loans. Temporary unfavorable balances may be offset by loans from other banks, by rediscounting, or by the sale of securities. Thus the condition of the bank's reserves over a period of time will depend on repayment of previous loans as well as on the extension of credit by other banks. The ability of the borrowers to repay will, in turn, depend on the salability of the goods *at the prices* at which they have been valued. Ultimately this ability depends on consumption for, although Bank 1 has granted credit to the "extractor", the "extractor's" ability to repay depends on the ability of the "manufacturer" to sell and pay and the final liquidation of the credit depends on the purchases of consumers. A bank's current reserve position is therefore dependent on two factors: the rapidity with which it is extending credit in relation to the activities of other banks, and the amount of previous loans being repaid.

In addition to offsetting the claims between individual business men and individual banks, the banking system must redeem its obligations which have been paid by business men to the community. This occurs, as indicated in the diagram, when the consumers present claims to Bank 5 on Banks 1, 2, 3, 4 and these are offset by the claim on Bank 5 presented by Bank 4. Thus the credit extended originally by Bank 1, on the basis of the value created by the "extractor", is extinguished by the consumption of the goods by the consumers.

It should be noted that three processes of offsetting are accomplished. Each business concern, by having one creditor, a bank, uses its claims on others to offset their claims on it. By obtaining claims on other banks (or its own) from those who are indebted to it, the business firm liquidates its debt to the bank. This leaves the banks to settle between themselves the claims arising out of the trade of the community. They do this by what is technically known as "clearing". Finally the obligations of the banks to the community (their notes and deposits) are liquidated by the banks' accepting them in payment of the debts owed by business firms to them.

Central Banking

The chart omits one important institution, namely, the central bank. The introduction of such an institution removes, one degree further from the original debtors, the obligation to pay gold. Although merchants and manufacturers promise to pay each other stated amounts of gold as the result of sales they do not intend in fact to do this. These debts are liquidated by these business men, as we have seen, through giving to each other and to banks, claims payable in gold on demand on other banks. This shifts to the banks the responsibility for making the gold payments. But

the banks themselves do not need to make these claims good to the extent that reciprocal claims balance. When a central bank is introduced, it is not necessary even to pay the unbalanced claims in gold, for immediate claims on this institution will be satisfactory. Thus the ultimate responsibility for the convertibility of the claims into gold is shifted to the central bank. Its major need for gold will be the unbalanced claims held against it by other banking systems. Thus, so far as gold settlements are concerned, the banking system in relation to other banking systems is reduced to a position comparable to the relation of a single bank to other banks. Within a banking system which has a central bank, claims on this central institution are "as good as gold" to the various members of the system. These claims may be obtained by the member banks by exchanging their promises of future payments for the demand promises of the central bank, on the evidence of the possession of short term assets. These assets are usually pledged as collateral. Or, again, they may be rediscounted. The central bank should have the same assurance of ultimate payment by the member bank as the member bank has that its customers will repay. Thus the central bank eliminates the necessity of gold transfers between banks of the system when clearing balances become temporarily upset. Its rediscount and lending operations supplement the money market and the stock exchange in adding fluidity to the credit system. In addition to creating claims on the basis of the assets which the member banks use as collateral or for rediscount, the central bank creates immediate claims on itself by making purchases. The purchases are usually of prescribed types of commercial paper or government obligations. But the central bank creates these claims just as certainly when it purchases office supplies. Finally, the member banks may obtain claims on the central bank by depositing gold or legal tender. Since

the reserves of the member banks consist of claims on the central bank, great responsibility for the soundness of the whole credit structure rests on the management of the central bank.

The test of the soundness of the credit structure is shown by the diagram to be the liquidity of the credit. Tregoe expresses this thought in the following sentence: "Its liquidation is the real essence of credit, and without liquidating capacity the thing created is not a credit, but a waste".⁹ By liquidation is meant cancellation of the credit. The banking system extends credit by recognizing a certain value in goods when this value is created. It transforms this value into generally acceptable purchasing power. This places in the hands of the members of the community claims on the banks, stated in gold. These claims are extinguished or the credit liquidated when the goods are consumed and the loans repaid. The banks do not have to make good their promises to pay gold so long as the claims which the community returns to them by the purchase of goods equal those created for the production or exchange of goods. If this liquidation does not take place, either the banks or other members of the community must make the promises good out of other resources. Hence the waste mentioned by Tregoe.

Even though liquidation is taking place, the total amount of bank credit need not diminish. As some goods are consumed, and the credit which has been based on them extinguished, new values are produced and credit extended on them.¹⁰ Taylor defines liquidation as, ". . . the refreshing

⁹ Tregoe, *op. cit.*, p. 24.

¹⁰ "But the dynamic principle is important that, although a bank's deposits may continue for a long time at the same height, nevertheless, they are sustained by continually substituted new promises." Taylor, *op. cit.*, p. 57.

of credit with newly tested indebtedness".¹¹ Bank credit thus becomes to some extent a reflection of the value of the circulating capital of the community.

Summary of the Theory of Banking

The function which the banks thus perform is in permitting the transfer of goods between A and B, while the purchasing power of the goods is transferred from A to C. The purchasing power or credit is embodied in a check or other medium of exchange which C may then transfer to D, embodied in a new check, and so on through the community until ultimately the credit or purchasing power of the goods is extinguished by their consumption. Goods are thus exchanged by passing representatives of their value from one member of the community to another and as long as the flow of goods from production to consumption is smooth and uninterrupted, there is no demand for metallic money. That is to say, banking facilitates the *indirect* exchange of goods without the use of a commodity money. Although he does not work the theory out completely, Jevons suggests the process in two passages. He says: "The value of goods are estimated and expressed in terms of gold, which acts as the common denominator of value, but metallic money ceases to be the medium of exchange. The banking organization effects what I have heard Mr. W. Langston describe as a restoration of barter".¹² Again in connection with international transactions he restates the process as follows: "Thus the use of metallic money seems to be rendered almost superfluous, and so long as there is no great disturbance in the balance of exports and imports, foreign trade is restored to a system of *perfected* barter."¹³

¹¹ *Ibid.*, p. 93.

¹² Jevons, *op. cit.*, p. 282.

¹³ *Ibid.*, p. 295. (Italics his.)

But such trade differs from barter in that a money of account is used and the exchange is indirect.

Variations in the Concepts of Banking

Contrasted with this description there are other concepts of the banking function. For example, James, while agreeing that credit is a form of purchasing power, suggests that this purchasing power is created by the banks. (See Appendix IV.) This is inaccurate. The purchasing power is created when goods are produced or services rendered, in short, when values are created. What the bank does is to render this purchasing power effective for indirect exchange. The purchasing power exists independently of the bank, but to make it effective without resort to their services, barter would have to take place.

Another prevalent view of banking holds that the bank lends to one group what it borrows from another. (See Appendix IV.) It is said that those having surplus "funds", "capital", or "credit" deposit it with the bank or lend it to the bank and that the bank in turn lends it to those who can use it effectively for business operations. This is not so inaccurate as it is indefinite and incomplete. The indefiniteness is a result of the indeterminate nature of "funds", "capital", and "credit". The incompleteness lies in the fact that the function described is only a part of the process. It is obvious that any claims which individuals have against the banks, in excess of the amount of gold held by the banks, must have originated from the process of granting or recognizing credit as above described. Thus it is not necessary for the banks to borrow from individuals in order to be able to extend credit. This difference between a loan and the extension of credit cannot be too strongly insisted upon. A loan presumes the transference from one person to another of something which is already in existence.

The concept of the extension of credit goes beyond the mere transfer of bank credit, or funds, from one individual to another. It attempts to discover whence this purchasing power came. Once in existence, bank credit can be loaned by one individual to another just as a watch or an automobile can. Lending is, therefore, not the essence of a credit transaction but a great many loans are loans of credit. Assisting people to lend their unused bank deposits to others is one of the functions of a bank, and hence the generalization that this is the totality of banking. If a customer deposits a check in a bank to which he is not previously indebted, the bank speaks of having received "cash" or "funds". What it has received is a claim on another bank. Somewhere in the banking community a bank has created this claim against itself by the extension of credit. The bank in which the check is subsequently deposited has no "cash" or "funds" in any objective sense. What it has is the ability to create claims against itself which, when presented to it through the clearing house, will offset the previous favorable balance.

It is true that sometimes bank credit is loaned by depositors either directly or through intermediaries. We have seen how bank credit extended to those who have created values eventually gets into the hands of individuals. Furthermore, this amount of credit remains in existence until the borrower redeems his obligation. An employee of the "extractor" shown in the chart on page 86 may be taken as an example. When such a company receives credit from the bank, it transfers part of the claim on the bank to this employee as compensation for his part in the creation of the value of the goods which it has sold. He now has several alternatives. He may purchase a commodity of some sort. In so doing, he has the choice of consumption or ownership. Whichever he chooses, an amount of credit equal to the

amount of the purchase will be extinguished. The purchasing power which had previously been "free" is now definitely related to some commodity. If it is a consumption good, the purchasing power is permanently eliminated when the goods are consumed. If it is a good of relative durability, the purchasing power may be partly recovered later by disposing of the good to another. But as long as he continues to own it, its purchasing power is not available.

In the second place he might decide that he did not wish to purchase anything immediately, but that he would like to do so in the near future. He might in the meantime permit someone else to use this deposit to purchase goods. This might result in a direct loan or an indirect transfer, with a bank as the intermediary. The borrower would have to make such use of the purchasing power thus obtained as to place him in a position to return it when wanted, be that on demand or at some definitely stated time.

His third choice is the decision not to use this purchasing power at all to command goods. In this case he is in a position to allow someone else to borrow it for the purpose of obtaining ownership or control of durable goods. It would be said popularly that he had purchased an investment. Actually, he would get some evidence of the transfer such as a mortgage, a share of stock, a bond, or some other instrument of like nature. This might be considered a decision to acquire ownership. Really, however, the purchase of the durable good is entrusted to someone else. This is the case even with a share of stock which legally represents ownership of a portion of the assets of the corporation. Economically, however, purchasing power has been transferred from the stockholder to the management.

Finally, instead of making these transfers directly by the purchase of stocks, bonds, mortgages and the like, the individual may employ an intermediary to make the selection

of the borrower for him. Such institutions as savings banks, trust companies, investment trusts, life insurance companies, etc. are engaged in these activities. It is considerations such as these which have led to the generalization that it is the function of banking to bring together the small surpluses of individuals, making them available for business purposes. But until a clear distinction is made between this function and that of providing a medium of exchange (issuing money as it were), little progress can be made with monetary theory.

The Effect of Bank Credit on Prices

The effects of bank credit on prices are similar to those of business credit. The reader is referred to the conclusions in Chapter II where these have been discussed. In general, whenever an individual is permitted to make a purchase on credit, the relationship between purchasing power and the quantity of goods offered for sale is altered. More goods can be bought than could have been if the credit had not been added to the existing demand. When the credit is liquidated, an equal amount of purchasing power is withdrawn. This need not, however, result in a decline in the amount of purchasing power in relationship to the goods, for the individual's next purchase may be likewise on credit. In this case, when the credit is liquidated, there will be established an equilibrium between the credit extended and that liquidated, resulting in the establishment of a new relationship between the supply of and the demand for goods.¹⁴ The action of the community as a whole with regard to the use of credit will give similar results.

The chief differences between the effects of bank credit and those of business credit arise from the general accept-

¹⁴ A similar statement is given by St. Clair: "I may continue this course throughout my life, always anticipating next month's salary; but the inflation of purchasing power was confined to the one month in which I actually bought more than the equivalent of my income." *Op. cit.*, p. 16.

ability of bank credit. When it is paid into the hands of the community as income, its effect on prices will be determined by the directions in which it is spent. The result may be erratic price movements in various lines of industry. The effects of business credit, at least in the first instance, will be confined to the lines in which it is extended. For example, suppose that the manufacturers of refrigerators permit consumers to purchase their product on credit. While this practice is being introduced, the demand for refrigerators may increase. On the other hand, suppose that banks were to encourage people to borrow against their next year's income. In this case the effect of the increased purchasing power on prices would be less definite.

The other effects of bank credit on prices will result from changes in the conditions under which the banks are willing to extend credit. As pointed out in the discussion of business credit in the preceding chapter, these are changes in: (1) the kinds of goods which may be made the basis of credit (this may also be expressed as the types of loans made or the purposes for which they are made), (2) the maturities allowed (or the degree of anticipation of income which may be permitted), (3) the percentage of the value of goods which may be extended (this may be expressed as the percentage of the future income which is anticipated). The effects of these changes are presented graphically in Figures 1, 2, and 3.

Figure 1, represents the effect of the introduction of credit into a system in which credit has not been used. Let OA represent the amount of credit extended per unit of time, and OT the period during which the loan is to run. In each succeeding unit of time an additional amount of purchasing power, equal to OA, will come onto the market. Thus the quantity of purchasing power will continue to increase during each unit of time by the average amount

FIGURE 1

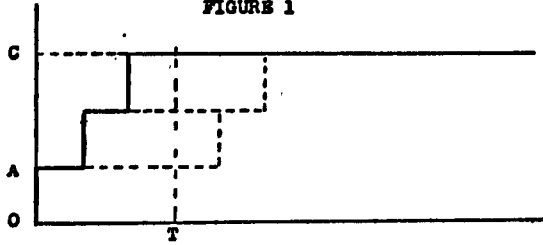


FIGURE 11

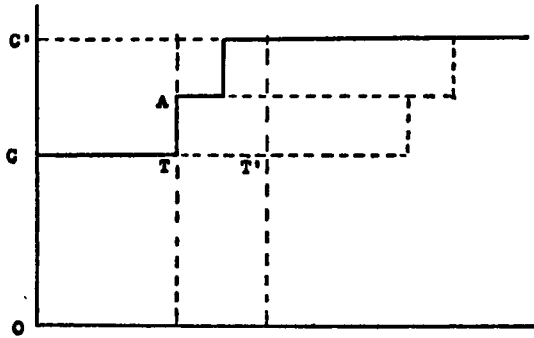
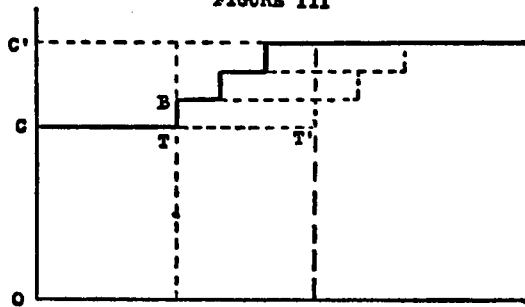


FIGURE 111



extended per unit of time. However, when the period *OT* has elapsed, that credit which was extended in the first unit of time will be liquidated. If the rate of extension continues unchanged, there will be no net increase or decrease in the total quantity of credit after the time *T* for the amount extended and liquidated during each unit will be equal. The amount of bank deposits in existence will tend to continue in the amount of *OC*. A new relationship will have been established between the amount of purchasing power and the amount of goods.

The same analysis and the same figure may be used to illustrate the effects of increasing the variety of goods upon which credit may be based.

In Figure 2 the effect of increasing the average length of maturities is represented. Let the average amount of bank deposits be represented by *OC*, and the average maturity of bank assets by *CT*, and the average amount of credit extended per unit of time by *AT*. Further, suppose that, at the time *O*, average maturities are increased to *CT'*. When the time *T* is reached, the credit extended during the unit of time *O* will not be liquidated, so that the total quantity of credit will be increased by *AT*, the average amount extended during the unit time *T*. During each successive unit of time the total quantity of credit will be increased by a similar amount until the time *T'* is reached, after which the rate of extension and the rate of liquidation will again be equal. During the period of transition, the average total quantity of credit in existence will have been increased from *OC* to *OC'*. Other changes aside, a new relationship between goods and credit will have been established.

Figure 3 represents the effect of changing the percentage which will be loaned, as for instance, that which would result from the acceptance of a current ratio of two to one instead of a previously required three to one. Let *OC*

represent the average total of bank deposits, and CT the average maturity. Suppose that at the time T an additional amount of credit, represented by BT , is extended as a result of the changed basis of valuation. There will then be an increment of credit equal to BT . In each succeeding interval of time a similar amount will be added until the time T' is reached (CT taken as equal to TT'), when the credit extended in period T will be liquidated, after which the rate of extension and the rate of liquidation will again be equal. During the period of transition, the total quantity of credit will have been increased from OC to OC'' , at which amount it will tend to remain, barring other changes in banking practice or volume of production.

Such transition periods may be referred to as periods of inflation. (See the quotation from St. Clair, footnote 14.) In addition to the effect on prices they may cause alterations in production. While this additional purchasing power is being introduced some prices will tend to rise. If this increased demand is assumed to be permanent, it may lead to the over-development of the lines of industry affected. When the demand returns to its previous level, the results of this expansion may lead to readjustments of these industries serious enough to induce a "depression".

The type of inflation which is most likely to occur is that resulting from the overestimation of the values of goods. When credit is extended, certain business concerns or whole industries may be permitted to spend, by anticipation, incomes which do not in fact materialize. This spending may be done by any or all of the factors of production engaged in these activities. The effect is to stimulate the demand for other goods. When the error becomes apparent, it will be necessary to curtail the expenditures of the industry in which the error was made. The effect of this on the industries stimulated by the fictitious credit will be twofold.

They will find not only that the additional demand has disappeared, but that the demand is even less than "normal".

The Relation of Bank Credit to Gold

The justifiable conclusion to be drawn from the arguments thus far presented is that bank credit may be expected to expand and contract as changes in the volume of production alter the need for a generally acceptable medium of exchange. The only necessary limitations to the expansion of bank credit are set by the production of economic values.¹⁵ This being true, what rôle may be assigned to gold? There have been two: the first is that it sets a limit to the expansion of bank credit; the second that it is the basis of bank credit. The first of these is well expressed by Hawtrey as follows: "Gold may be needed for any or all of three distinct purposes. It may be needed for circulation as coin, or to form a reserve against the circulation of paper, or for export to a foreign country."¹⁶

¹⁵ It is to be noted that this is not synonymous with changes in the physical volume of production. Much of the labor and materials entering into extractive and manufacturing activities does not result in proportional increases in values.

¹⁶ Hawtrey, *op. cit.*, p. 74.

Cf. the following:

"...credit itself rests upon a metallic basis. This basis imposes real limits on the advance of prices through the extension of credit. If prices rise in that way, wages rise and retail prices rise, and at once more actual cash is required for internal trade of the country. Similarly as regards the foreign trade, a rise in prices would stimulate imports and check exports, and tend to cause a drain of gold." Nicholson, *op. cit.*, p. 147.

or again:

"The demand for money increases as national wealth grows and if for any reason the production of gold falls behind this rate of increase and is not sufficiently compensated by economies in the use of gold, conditions would be created which would tend to restrict the basis and hence the pyramid of credit and so depress prices". League of Nations, *Report of the Gold Delegation*, p. 30.

None of these limitations, however, need be invariable in its effect. Banking history shows that each of them has been so modified as to reduce the force of its influence. It is quite likely that if the extension of credit could be properly controlled, gold might be dispensed with altogether. In recent years it has been almost entirely withdrawn from circulation in western countries. It has been dispensed with as a means of settling inter-bank obligations within a country through the introduction or development of central banking. Its importance in the settlement of international balances has been reduced by the practice of redeeming national currencies in foreign drafts. Legal minimum reserve requirements remain as the major factor tending to establish a quantitative relation between gold and credit. But such reserve percentages as have been maintained in practice have been subject to sufficient variations to caution the monetary theorist against assuming a definite quantitative relationship between gold and credit. Furthermore, the recent changes in banking laws, permitting the inclusion of foreign exchange in the legal reserve, indicates a new attitude toward the meaning of reserves.¹⁷

¹⁷ See the League of Nations, *Report of the Gold Delegation*, p. 13.

Beckhart lists the measures taken in the United States to safeguard gold during the war as follows: amendment of the federal reserve act to lower the reserves held by member banks, concentrating these reserves in the federal reserve banks, encouraging state banks to join the federal reserve system or to keep their reserves with the reserve banks, exchange of federal reserve notes for the gold held by the banks and the public, discouragement of the domestic use of gold, strict control over foreign exchange and the export of gold. See B. H. Beckhart, *Discount Policy of the Federal Reserve System* (New York, 1924), pp. 252, 253.

Burgess presents charts of the working reserves of national banks in the United States, showing that from 1913 to 1926 these have been reduced from 34% to 20.5%. (See also the charts in appendix A in the same book.) W. R. Burgess, *The Federal Reserve Banks and the Money Market* (New York, 1927), pp. 32, 33.

The following table is taken from E. G. Peake, *An Academic Study of Some Money Market and Other Statistics* (London, 1926), p. 72.

The second rôle assigned to gold in relation to bank credit is frequently stated only by implication. As a result of the observation that gold reserves are a fraction of the amount of bank credit there is a tendency to assume that the gold "generates" the bank credit. The implication is strengthened by the ability to demonstrate analytically and statistically that an increase in gold reserves may permit a multiple expansion of bank credit. (See for example the work of Angell and Ficek quoted above.) But it has been our intention to show that the expansion of bank credit can also be explained on the assumption that there is no gold reserve at all. The point is that gold is not the generating influence. It is a limiting factor. We have also tried to show that it acts in this capacity through being drained away. That is to say, the extent to which the multiple expansion may be carried is a function of the amount lost during or after such

TABLE TO SHOW PROPORTIONS BETWEEN LIABILITIES (OR NOTES AND DEPOSITS) AND GOLD

	<i>Bank of England</i>	<i>Bank of France</i>	<i>Reichsbank</i>
1880	53%	—	61
1885	45	34	60
1890	42	39	59
1895	58	50	64
1900	40	46	49
1905	49	57	51
1910	53	59	48

J. W. Angell and K. F. Ficek have recently published a thorough analysis of the limitations imposed on the expansion of bank credit by reserve requirements. The limiting factors entering into their formulæ are: the minimum reserve requirements, the percentage of cash in circulation to the amount of bank deposits, the percentage of loans required as minimum balances, and the amount of gold exported as a result of the credit expansion. "The Expansion of Bank Credit," *Journal of Political Economy*, vol. xli, nos. 1 and 2, February and April, 1933.

For an analysis of the supply and demand in the gold market see Hawtrey, *The Gold Standard in Theory and Practice* (London, 1927), ch. ii.

expansion. It is, therefore, more important to study the conditions which lead to these drains than to seek a percentage relationship which gold may be expected to bear to bank credit. The demand for gold should be thought of as the amount which may be lost because of the character of the debt-credit structure, rather than as a percentage of the total volume of bank credit. In this way, it may be possible to learn how to control the expansion of credit so that the drain will not take place. It is not the international drains alone which are of importance, but also those between banks in the same country. This applies whether there is a central bank or not. A multiple expansion of credit on a given amount of gold may take place in such a way that some banks will find that they are unable to maintain their reserve position. This leads to a collapse of the debt-credit structure though no foreign drain occurs. This can be avoided only by close attention to the assets which the banks are acquiring as a result of the expansion. In the next chapter, the conditions under which the clearance of credit or the offsetting of debts may be expected to take place are presented. It is hoped that the discussion will demonstrate that a banking system operated toward the end of maintaining perfection of clearance will work to economically desirable ends.

APPENDIX 4

THE FUNCTIONS OF BANKING

"As the confidence on which credit is grounded extends itself, means are developed by which even the smallest portions of capital, the sums which each person keeps by him to meet contingencies, are made available for productive uses. The principal instruments for this purpose are banks of deposit." J. S. Mill, *op. cit.*, vol. ii, pp. 51, 52.

"When the practice, however, has grown up of keeping this reserve not in his own custody but with a banker, many small sums, previously lying idle, become aggregated in the banker's hands; and the banker, being taught by experience what proportion of the amount is likely to be wanted in a given time . . . is able to lend the remainder, . . . to producers and dealers. . . ." *Ibid.*, p. 52.

"A bank is an institution which specializes in two fundamental operations. It lends credit to people who have need of it, or in other words it guarantees the credit of individuals by substituting therefor the credit of the bank which is acceptable to everyone. In order to furnish this credit to those in need of it, the bank borrows from those who have funds to lend. These two main functions of borrowing and lending credit are the special characteristics of banking institutions." C. W. Phelps, *The Foreign Expansion of American Banks*, p. 5.

Phillips also adopts this idea of borrowing and lending as the typical banking function. Deposits in banks are thought of as loans by individuals to the bank. See pages 2-3 of his *Bank Credit*.

Contrast the following statements with those above:

"Out of this grows the general opinion that the bank borrower obtains a loan of something at the bank and pays a kind of rental for its use at a fixed percentage rate, the aggregate sum paid depending upon the time for which the loan is made, while at the end of the time the funds are returned. A different view of it is obtained when we think of the bank as rendering a service—

that of making the customers' own purchasing power effective in exchange for other goods and measuring its charge in proportion to the time or period over which this service continues to be rendered." Willis and Edwards, *op. cit.*, p. 17.

"To draw the conclusion, as is frequently done, that the increase in time deposits led to the increase in investments would be quite erroneous. That would infer that time deposits were the result of savings. To a certain extent this is true, but to a larger extent the increase in time deposits was simply one manifestation of the total increase in credit, expanding upon an enlarged credit base. *Investments were perhaps rather a cause for the increase in deposit totals than a result.*" (Italics mine). B. H. Beckhart, *The New York Money Market*, vol. iv, p. 36.

"When a banker lends, we say that he grants or creates credit or 'a credit'. This is a loose way of describing a double transaction. The banker assumes an immediate obligation to his customer, in exchange for the customer's obligation to him at a future date". Hawtrey, *Currency and Credit*, p. 9.

"With a modern banking system, however, the process of transformation is obscured: for such a banking-system not only itself creates the most important forms of money (whether notes or cheque-breeding deposits), but creates them mainly by way of loans to the business world. By expending these loans business men procure practically the whole of that part of the expansion of Circulating Capital which they are not willing to provide by Direct Lacking." Robertson, *Banking Policy and the Price Level*, p. 51.

"It is clear, therefore that in the process of exchanging its own credit for that of a borrower, the bank has monetized credit. *It has created purchasing power which did not exist before, since it has supplied the borrower with a means of paying his debts, without in any way reducing the amount of money in the hands of the other members of the community.*" (Italics his). James, *op. cit.*, pp. 194-195.

"Bank credit is, however, nothing but a fund of purchasing power and, as we have already observed, the commercial banks create the greater part of that purchasing power." *Ibid.*, p. 223.

"To put it crudely, banking is a device for coining into dollars (note: not gold dollars but money of account)—land, stores, and other wealth not otherwise generally exchangeable." Irving Fisher, *op. cit.*, p. 41.

"In short, goods in warehouse or on shipboard of a salable or bankable kind, i. e., of a kind which lenders believe can be realized upon promptly, can be coined by credit into a present means of payment; and their value can be immediately set into the circulatory movement of exchange against other goods similarly treated." Laughlin, *op. cit.*, vol. ii, p. 18.

"It enables a man having salable, specific goods to change them into control over goods in general and obtain any desired division of their value." *Ibid.*, p. 19.

Gregory points out that Pennington, in Tooke and Newmarch, vol. ii, p. 369, makes statements which, ". . . embody in a succinct and remorseless style the germ of the modern theories of the nature of bank deposits." T. E. Gregory, *An Introduction to Tooke and Newmarch's "A History of Prices and of the State of the Circulation from 1792 to 1856"*, p. 11.

For a recent discussion of the question whether bank credit is best measured by loans or deposits see: Lauchlin Currie, "Treatment of Credit in Contemporary Monetary Theory", *The Journal of Political Economy*, vol. xli, no. 1, Feb. 1933, pp. 58-79.

The following are examples of statements expressing the results obtained by the banking process:

"The manufacturer sells to the wholesale dealer, the latter sells to the retailer, and the retailer to the consumer. By the intervention of the banker, however, the transactions of many different individuals, or even of many branches of trade, are brought to a focus, and a large proportion of payments can be balanced off against each other." Jevons, *op. cit.*, p. 247.

"A class of men is formed, who make it their business to deal in these securities, or evidences of debt. . . . Banks become, in this way, substantially bookkeepers for their customers." Colwell, *op. cit.*, p. 9.

CHAPTER IV

CLEARANCE

Introduction

HAVING outlined the nature of banking and the credit system, we are now ready to consider the demand for gold. It would seem from the foregoing analysis that in a perfectly functioning system of credit, there would be no need of gold. But the credit system does not function perfectly and it is for this reason that there is a demand for gold. Whenever the off-setting of debts through the banking system does not take place, a demand for gold arises.¹ Review of the mechanism of a credit economy indicates four types of clearance which might break down, namely, clearance between individuals, between banks, between banking systems, and between a banking system and the public.²

Clearance between Individuals

The first of these is the clearance of debts between individuals. The whole credit system rests on the trade relations between individuals. In an economic order characterized by division of labor, the continuing exchange of goods is the primary essential. When a credit system has been developed, "purchases and sales continue to be made in terms of gold and silver coin, but equivalent quantities of

¹ This must be modified to include the cases where a central bank holds the gold reserves of the other banks. In this case, the first effect is an increased demand for central bank deposits.

² "Clearance" is used in a broad sense to mean the liquidation of debts by offsetting them against credits. It will be seen that banking theory, as presented in this monograph, is a part of the theory of economic equilibrium.

goods thus estimated are made to pay for each other."³ In the purchase of goods, debts thus stated are incurred; in the sale of goods, similar credits are obtained. "Goods" of course, must be interpreted broadly to mean "goods and services". In order that clearance may take place, the individual must sell as much as he buys. This process of offsetting debts against credits takes place in the individual's bank account. Instead of being indebted to other business men and offsetting these debts by transferring to his creditors the obligations of his debtors he concentrates his debts in a bank debt which is settled by giving the bank claims on other banks. These claims he obtains by selling goods.

Thus it is seen that the study of credit does not proceed from a study of money.⁴ It more properly starts with an understanding of trade. Business in a well developed credit economy is not retarded by a shortage or lack of money. The difficulties of business arise from a breakdown of trade. This is not caused by a shortage of money or credit, but by a disruption of exchange and clearance. It cannot be righted by a credit policy, but must be corrected by a change in trade policy. If a man is unable to pay his obligations, it is an indication not of an inability to borrow money, but of an inability to sell goods. He has been engaged in an activity which he assumed would result in exchangeable values equivalent to his obligations but which has not.

When business men enter into trade or exchange transactions, they do not express their obligations in terms of the commodities involved, but rather in abstract units variously

³ W. S. Jevons, *op. cit.*, p. 186.

⁴ *Cf.* Colwell, "The credit system does not, then, really furnish a substitute for money, so much as a mode of dispensing with it." *Op. cit.*, p. 193.

Also, "The inquiry which we prosecute, to ascertain the nature and doctrine of money, is, what is commerce, and what is the nature of the agency of money in its affairs." Colwell, *op. cit.*, Introduction, p. 1.

called dollars, pounds or francs. If business men are able to sell their products for a larger total number of these units than their debts come to, cancellation or offset is possible. If there is a balance, this must be settled in some other way. For purposes of definiteness in the transactions, it is agreed that these differences will be settled in a universally desirable commodity, gold. While the prices representing the exchange value of the goods are expressed in gold, they are at least over short periods, more closely related to each other than to gold. The position taken here is that prices are more accurately thought of as representing exchange relationships between goods than as representing the relationship between individual commodities and gold.⁵ Changes in the price level are more accurately thought of as changes in the degree of exchangeability of goods than as changes in the value of gold. With the development of business activity, there grows up a complex of prices through which goods are related to each other as raw material and finished products, substitute pro-

⁵ The attention of the reader is directed to the following: "In thinking graphically of price changes we should think, not of the movements of a single curve, such as represents adequately the Bank of England rate, but of a broad, irregular band, within which many lines are moving, some up, some down, some horizontally—lines which are rather far apart near the edges of the band but thickly congregated near the middle, and which keep crossing each other as they shift their relative positions.

"It is true that an investigator often writes of series like bank clearings or price indexes as if they represented magnitudes not less definite than the Bank of England rate. Doubtless there are problems which justify the practice—problems in which the one matter of significance is the net resultant of a complicated mass of movements. Yet such problems are rare, and it is always wise to ask explicitly whether the hypothesis in use does not require that notice be taken of the diversity of movements which are hidden in the simple-seeming aggregates or averages, certainly we do not get the full benefit of the statistical approach to the study of business cycles, unless we keep in mind the range and variety of the changes which most of our time series represent." W. C. Mitchell, *Business Cycles, The Problem and Its Setting* (New York, 1927), pp. 207-9.

ducts, joint products, complementary products, etc. It is necessary for the continuity of trade that the prices of various products be so adjusted to one another that profitable operation of business will be possible. If they are so related offsetting of debts can take place without the employment of gold. It is the maladjustment of prices which interrupts purchases and sales, and hence induces non-clearance and a resort to gold. Changes in prices are more intimately related to changes in other prices than they are to changes in the total quantity of gold. They are more intimately related to what Mill calls the "state of credit" than to the quantity of credit instruments. The amount which a business man can buy is dependent on the amount which he can sell. The prices he is able to pay depend on the price at which he can sell. As long as the relationship of prices is such as to keep trade flowing, the debts incurred in business (and conversely, the credit extended) will clear; and neither the volume of business done, nor the prices at which it is done will be dependent on the quantity of gold. Nor will it depend on the volume of media of exchange (bank credit or bank notes), introduced from the outside for, as shown above, business men create their own media of exchange with the expansion of trade.⁶ The abstract units in which they state their debts are technically called the "money of account".⁷ This money

⁶ See *supra*, p. 40.

⁷ Great emphasis has been laid by many writers on the concept of money of account. Most of them, however, lose sight of it in their discussion of the control of credit and consider only the quantitative relationships of objective exchange media. Cf. the following: "The basis of monetary theory should be the money of account". Hawtrey, *Currency and Credit*, p. 2. (Italics his).

"Suppose then that society is civilized, and that money does not exist. Goods are brought to market and exchanged. But even though there is no medium of exchange, it does not follow that they must be bartered directly for one another. If a man sells a ton of coal to another, this will create a *debt* from the buyer to the seller. But the buyer will have

of account becomes related to and kept at parity with

been himself a seller to some one else and the seller will have been himself also a buyer. The dealers in the market can meet together and set off their debts and credits. But for this purpose the debts and credits, which represent the purchase and sale of a variety of goods, must be reduced to some common measure. . . . This is what is technically called a 'money of account' . . . Even when money is used, it may occasionally happen that the unit for the calculation of debts diverges in some degree from exact correspondence with the money in circulation." *Ibid.*, p. 2 (Italics his.)

"Money-of-account . . . is the primary concept of a theory of money." Keynes, *op. cit.*, vol. i, p. 1.

Colwell devotes an entire chapter to the concept in his *Ways and Means*. He also published two articles on the subject, one in *Hunt's Merchants Magazine*, April, 1852, and one in the *Bankers Magazine*, July and August, 1857. The following are quotations from his *Ways and Means*: "Gold and Silver are commodities of great value in small compass, selected for coinage, and made the legal standard of payment; money of account is the language in which prices are expressed, and books of account are kept." Introduction, p. 2.

"We distinguish, then between the term money, as applied to giving prices, to keeping books of account, to expressing sums on the face of promissory notes, bills of exchange, and other securities, and the term money, as applied to coins used in making a payment; and this distinction we hold to be so important, that the subject cannot be well understood without it." *Ibid.*, pp. 2-3.

"Money by which we intend coins of gold or silver, is neither a standard of value, a measure of value, nor a representative of value. The precious metals are commodities of value, and do not, of course, lose that quality, though they gain another, by being coined. They become, by coinage and the law of legal tender, a *standard of payment*. Every man may, by law, claim payment in coins; that is, for any commodity previously sold, for any debts due, every person may exact the expressed equivalent in the commodity gold and silver assayed and coined at the mint in denominations agreeing with the money of account." *Ibid.*, pp. 3-4 (italics mine).

Colwell also gives an account of the history of the doctrine of money of account and quotes from Leon Fancher, *Sur L'Or et sur L'Argent* and P. Kelly, *The Universal Cambist and Commercial Instructor*, etc. Of the origins of the doctrine he says: "Sir James Stewart, in whose works we first find distinctly set forth the existence and uses of a money of account, did not speak of it nor propose it as a currency; he did not regard it as money." *Ways and Means*, p. 63.

“money” (usually gold) through the banks, which stand ready to assist in the clearance of debts and to provide the gold for the settlement of that portion which does not clear.

The significance of the concept of a money-of-account lies in the new orientation which it gives to the idea of the value of money. It appears quite possible that the value of the money of account (as measured by an index of prices) may be quite different from that of gold over short or cyclical periods. Prices, we have seen, are not in the first instance related to the quantity of gold, but to other prices and the ability of business men to make purchases without making immediate payment. The payments which they eventually make are not made in gold, but are effected through the process of offsetting debts and credits. The banks assist in this process and so long as it takes place, the volume of gold in the country is not a dominating factor. There is, therefore, the possibility of price fluctuations, starting with one commodity, or in some group of commodities and spreading to others through the interrelationships which exist between prices as indicated above. These changes will be reflected in any index of prices which may be constructed. Hawtrey gives a good description of the cumulative nature of these price changes and indicates that there is no limit to which an upward or downward movement may go under non-gold standard conditions.⁸ It seems improbable however, that a movement once started, will proceed indefinitely, for this would assume that perfect adjustment between related prices is maintained, thus permitting the continuance of trade and the clearance of credit. But it is difficult to imagine such

“No writer, so far as we know, has apprehended more clearly the nature of a money of account, than the Marquis Garnier. He published afterwards in 1819, a ‘History of Money from the highest antiquity to the reign of Charlemagne’. The latter work contains a chapter of Moneys of account . . .” *Ibid.*, p. 75.

⁸ *Currency and Credit*, p. 13.

perfect adjustment, and statistical analysis shows that prices undergo serious shifts in their relationships to one another during periods when their average is rising.⁹ There comes a time, therefore, when these business men find that the new relationships of prices make it impossible for them to maintain their sales, or a balanced relationship between their receipts and expenditures and then clearance breaks down. Conversely, with a declining tendency in prices, there comes a time when prices reach such a relationship that business men, who previously found it impossible to conduct their business due to a maladjustment, are again able to buy and sell at such prices that clearance within their business takes place, their credit is reestablished and they are able to make

⁹ "A detailed study of the movements of individual price series shows that the cycles which are discernible in the movements of a general price index are the net resultants of a host of widely different movements in the prices of individual commodities. The prices of some commodities do not conform to general business cycles at all. Those commodities that do reflect a general cycle in their price movements differ materially among themselves in respect to the timing of revival and recession and in the duration and amplitude of their cyclical swings. Cycles in commodity prices appear as broad tendencies among varied movements." Frederick C. Mills, *The Behavior of Prices* (New York, 1927), p. 437. See especially ch. i, sec. iv and ch. iii, secs. iv, v.

Mills quotes W. C. Mitchell, F. Y. Edgeworth and Norman Crump, "... with a rising price level the dispersion of price relatives increases, while the degree of dispersion declines with falling prices". . . .

"A rising price level, in Crump's view, is accompanied by an increase of dispersion. Sooner or later the price maladjustments which result from wider dispersion become so acute, that trade is thrown out of gear and collapses. 'The rise in prices contains the seeds of its own decay.'"

Mills does not find that his own study confirms this view. "We may conclude that in so far as the dispersion of prices is affected by changes in the price level it is the degree or violence, of the change, not the direction of change, which is important. The coefficient is not high enough, however, to indicate that changes in the price level are the only factors affecting dispersion. There appear to be internal movements, unconnected with changes in the price level, which the index of dispersion enables us to follow." *Ibid.*, p. 284.

further purchases, thus arresting an indefinite decline in prices.

Clearance between Banks

The degree of clearance possible in business is reflected in the perfection of bank clearings, for banking is the hand-maiden of business. It facilitates trade but does not create it. While it is true that trade can flow more readily with banking than without it, the existence of banks will not in and of itself create trade where there would otherwise be no possibility of trade. This important and self-evident truth is very often overlooked. In periods of trade stagnation it is assumed that the banks hold a magical power of restoring business to some previous high volume by expanding their liabilities. This position is probably arrived at from the observation that the refusal of banks to finance existing trade retards that trade, thus forcing business to resort to a more cumbrous and less efficient mechanism of exchange. By careless logic it is assumed that the converse of this proposition is also true, namely, that banks have the power of creating trade or restoring trade which has broken down.

Insofar as all of the members of a closed economy are customers of the same bank and so long as they use no other forms of money, the bank can extend credit to these customers without fear of losing reserves. If "A" has made a sale to "B" and drawn a draft against him, this draft might be given to "C" at a discount to settle a previous obligation or to acquire new goods.¹⁰ But it is the function of banking

¹⁰ Colwell describes this process as follows: "The practice of paying or extinguishing debts by the process of clearing, now becoming so common among the banks, is not new. Three centuries ago, a very large proportion of the payments of Central Europe were made in that way. Then it was effected, on a large scale, between individuals; now it is wholly confined to the banks. Then it was the chief mode of accomplishing the vast payments arising from the trade of the multitudinous fairs of that period; and it so continued until other modes of commerce sup-

to eliminate this cumbrous exchange system by exchanging its promise for that of "B".¹¹ In creating this obligation against itself, the bank does not lay itself open to a drain of gold, for since by hypothesis all people use banking facilities and all in this particular community use the same bank, the check drawn by "A" will be redeposited by "C". Thus the clearing position of the bank will be unaffected, for the check drawn by "A" will just match itself when deposited by "C". "B" is subsequently supposed to liquidate his obligation to the bank by the sale of his products. In making such a sale he will receive a claim against the bank which was originally created by the bank in favor of another. Thus the bank's obligations and those of "B" are reduced by the

planted that of the fairs. The clearing at the fairs was simply a process of setting-off debts against debts—the same, in effect, as balancing book accounts. A said to B., you owe me a thousand florins; pay that amount for me to C., to whom I am in debt. This being done, A. is acquitted, and thus the process goes on. It is obvious that the final balances, among hundreds assembled for that purpose, may be reached by setting-off mutual debts, and drawing verbally on each other at sight, where the process involves more than two persons, and thus continuing to pay, until the result is reached of those who have more coming to them than they had to pay, and of those who had more to pay than they had due to them." *Ways and Means, Introduction*, pp. 14-15.

Note: In the development of the theory of money, the fundamental idea expressed above of A instructing B to pay C has come to be expressed as the velocity of credit. This view fastens attention on the inherent capacity of some type of credit instrument to circulate rather than on the more important fact that for the process to be possible at all there must be a flow of trade to make the offset possible. Thus instead of directing first attention in the study of credit to the necessity of reciprocal trade in order that the credit system may perform its function of offsetting the debts, the impression is conveyed that the velocity of credit instruments is of first importance and that if it is high or can be increased, trade will be improved.

¹¹ When the open-book method of finance is used by the business men, "A" retains his claim against "B" and gives his own promise to the bank instead. Both methods come to much the same thing, for "A" would be contingently liable for a discounted draft.

same amount and the transaction between "A" and "B" is finally liquidated. The goods have been exchanged and the memoranda of the values involved, have been cancelled.¹²

But suppose that "B" is unable to sell his goods in exchange for a claim on the bank. If the situation is serious enough, that is, if he must reduce the price of his product too far, "B" fails and is unable to repay the bank or liquidate the credit originally extended. What is the effect of this on the bank? Assuming, still, that everyone uses the bank and that no gold is in circulation, there is no effect on the bank. Its clearings will still be in balance, for every check drawn will be redeposited with no drain on its reserves. There is apparently an upset of the equality of its assets and liabilities, for "B's" obligation which formed part of the bank's portfolio is now worthless, while its own obligations remain unchanged. Although the net worth of the bank will be reduced, its reserves are unaffected, for it is still able to meet all of its obligations by merely transferring them from one account to another. In fact, we are forced to the conclusion that it makes no difference whether the bank has a portfolio at all.

The significance of this situation lies in another direction. The effect has been to inflate the media of exchange and to depreciate the value of the money of account. The volume of the media of exchange created, stated in terms of the

¹² "On the static assumptions, an 'ideal credit economy' is perfectly possible. If everything that needs to be marketed is perfectly marketable, if the stream of business flows regularly and without friction in the same channels, if all contingencies are foreseen and dated in advance, a bank needs no cash reserve. All payments can be made by bank-credit. Bank bookkeeping becomes merely a refinement of barter, with money remaining as a measure of values, a unit for reckoning, but not being used as a medium of exchange, or as a bearer of options, or in reserves. The measure of values function is the great static function of money." B. M. Anderson, *Value of Money*, p. 543.

See also Hawtrey, *Currency and Credit*, ch. i.

money of account, has been larger than the value of the goods on which it was based, as measured by the amount of the money of account which people were willing to give for them. Since the amount of bank credit extended on the basis of certain goods was greater than people were subsequently willing to give for these goods, the people have more to spend on other things. What the final result will be will depend on the directions in which these additional funds become effective.

If the bank in the above illustration is a member of a system of banks, its responsibilities and vulnerability are different. The bank becomes indebted not only to its own customers but to customers of other banks. Therefore, the failure of "B" may result in an unmatched or uncleared drain on the bank's cash.¹⁸ Thus, a bank's clearing position depends on certain analyzable factors. Those which bring claims to it are; new depositors, the deposits of its customers, and repayment of loans, aside from incidental items of an earnings nature. Those which tend to cause a drain on its cash are chiefly, the making of loans, the withdrawals of its customers, and the loss of depositors. The gain or loss of depositors can be eliminated from consideration for no consistent policy can be developed on this basis.

Secondly, the routine deposits and withdrawals of customers would ordinarily not be expected to give rise to a net drain or increase in cash, for usually each depositor will attempt to maintain some average balance. What this average deposit is for each customer can be determined by careful analysis of the bank's accounts. The ability of the bank to

¹⁸ "If the issues of a bank are in such credit as to be employed as money, but not in demand enough to carry them back to the bank in payment, they leave the vicinity of the bank, or pass into other channels of circulation, and become liable to be returned, not in payments of debts due to the bank, but as a demand on the bank for specie." Colwell, *op. cit.*, p. 505.

maintain its cash reserves then depends upon the relation of the volume of its new loans to the repayments of old loans. If these are not repaid the bank will be subject to unfavorable clearings and loss of reserves. Underlying the ability of the bank's customers to repay, is their ability to sell. Each of the bank's customers must sell as much as he buys on credit in order for the bank to remain solvent. This holds true even though the proceeds of the loans when originally made were paid away to customers of the same bank. The recipients of this bank credit have evidently made sales to the borrower and if members of the community which is served by this bank do not return to the borrower as much of the bank's credit as was extended to him, they may pay it away to the customers of other banks.

More important, however, is the trade between the customers of one bank and those of other banks. When a bank's customers make purchases from the customers of other banks, it is essential to the solvency of the first bank that either these or other customers make an equivalent volume of sales to the outside community. If these are not forthcoming the bank has not the means except by borrowing, to meet the unfavorable clearings. Obviously, it is not necessary that payments between any two banks be reciprocal any more than that the payments between two specific business men be reciprocal. Inter-bank clearance offsets the debts which can be offset, leaving only net debtors and creditors to settle balances. The concern of any individual bank is that it be not consistently net debtor. It will avoid this only when the debts and credits of each of its customers are clearing individually and when the debts and credits between its customers in the aggregate and the customers of other banks in the aggregate are offsetting. And these conditions will prevail only when the sales of each of its customers offset their purchase and when the sales of its

customers to those of all other banks are offset by purchases from them.

The loss of reserves does not indicate that the bank has extended too much credit, but that it has extended it improperly. As quoted above, the proper study of money is the study of trade. We see, therefore, that the bank's primary task is to analyze the credit which it grants in such a manner as to determine the likelihood of the continuance of reciprocal trade.

Temporary unfavorable clearing balances will appear in the business of every bank. While the loss of reserves need not mean that the bank has extended credit improperly, it may mean that reciprocal trade has taken place with a time lag of a few weeks or months. In such cases temporary borrowing from other banks or from the central bank will bridge over the gap. Also in cases where an excess volume of purchases from other communities are of continuing nature, they may be offset by the sale of the securities of the purchasing community to the selling community.

Clearance between Banking Systems

Just as each individual offsets through his bank, his debts and credits to the rest of the community, and as the bank offsets the debts and credits of its customers with the customers of other banks, so the banking system offsets the debts and credits between the citizens of the nation and those of other nations. If the transactions between the members of a banking system and those of all other banking systems are reciprocal, they can be cleared through the banking systems. If they are not, the banking systems receive the signal through gold movements. This gold movement does not necessarily indicate that too large an aggregate of bank credit is outstanding and that credit in general should therefore be contracted. It does mean either that too much credit is being extended to domestic importers or that loans to foreigners

on short or long term are too large. Colwell expresses an important thought when he says,

If the importing merchants of the country have, therefore, in competition with foreigners, imported too many goods, and they find a short supply of foreign bills to make their foreign remittances, that furnishes no sound reason why the merchants and manufacturers of the interior should be embarrassed in their business, or why they should not be supplied with the regular quantity of domestic currency which that business requires.¹⁴

The essence of banking has probably been better expounded in its international relations than in any other phase. Every student of elementary economic theory will, like a parrot, repeat that imports must pay for exports.¹⁵ But the theory

¹⁴ *The Ways and Means of Payment*, p. 223.

¹⁵ It is hardly necessary to give a detailed exposition of this theory, for it has been treated extensively and with a greater degree of unanimity than almost any other doctrine in economic theory. Cf. the following:

"Now between any two centres the *demand* for remittances in one direction constitutes the *supply* of the means of remitting in the other. A disparity between them is simply a sign that supply and demand no longer balance." Hawtrey, *Currency and Credit*, p. 59 (italics his).

"If France exports to the amount of a hundred millions to England, and the latter to the amount of ninety-five millions to France, the indebtedness between them, to the amount of ninety-five millions on each part, is adjusted by bills of exchange, and other devices of credit. The precious metals are called in to pay the balance of five millions. There is, indeed, no resemblance between this use of the precious metals and the processes of credit by which this vast indebtedness of one hundred and ninety-five millions would be fully paid and settled. On the contrary, the five millions worth of gold and silver employed to cover this remaining debt would be merely another commodity exported to bring the transactions between the nations to a balance." Colwell, *op. cit.*, p. 166.

Note: The importance for the theory of the value of money is that the demand for gold is not determined by the volume of trade but by the degree of equilibrium or reciprocity of the trade. The process, although it seems to be more clear in international transactions than in domestic, is the same in either case.

"Thus the use of metallic money seems to be rendered almost superfluous, and so long as there is no great disturbance in the balance of

of foreign exchange has remained in a pigeon-hole and has not been applied to domestic banking. The same principles apply to the operation of an individual bank in its relations to other banks, and to any group of banks, for instance those of a federal reserve district, as against all other banks. These principles are that a bank or group of banks should endeavor to extend credit in such a way as not to lead to a break-down of any of the types of clearance which we are here discussing. If, however, clearance has broken down the bank should seek by careful analysis to determine which of its borrowers or group of borrowers is responsible for this break-down and cease extending credit to them.

Clearance between the Banks and the Community

A final aspect of the problem of clearance is the relation of the banks to the individuals of the community which they serve. Fundamental to the understanding of this process is the concept of the extension and liquidation of bank credit. Colwell and others following him have stated this in one form or another, but the general import might be summarized by saying that "the deposits in our banks are the proceeds of discounted commercial paper. The credits issued by the banks, of which these deposits are composed, are absorbed and wholly extinguished whenever they are paid to the banks. Their place is supplied continually by new discounts and new credits."¹⁰ This statement might be amended to read: "The deposits in our banks are the result of the acquisition of assets

exports and imports, foreign trade is restored to a system of *perfected barrier*." Jevons, *op. cit.*, p. 295 (italics his).

Later expositions modify the simple theory of the equilibrium of trade by giving consideration to short and long term loans. These credit transactions, however, are subject to the same types of control as are domestic transactions and will be discussed under the topic of control. See E. S. Furniss, *Foreign Exchange* (Boston, 1922) and J. W. Angell, *The Theory of International Prices* (Cambridge, Mass., 1926).

¹⁰ Colwell, *Ways and Means*, Introduction, p. 15.

by the banks." For it makes no difference what these assets are, discounted paper or bonds, any increase in banking assets leads to an increase in banking liabilities, namely deposits.¹⁷

Once bank credit has come into existence it may circulate among business men in the settlement of their mutual obligations. Ultimately, however, it is paid to individuals as income; for it is by means of checks against the borrowed deposits that business makes payments to those who have furnished the labor, the capital, and the land used in production.¹⁸ It may in the first instance be paid to other business men, but ultimately it is paid to individuals. It is in this way that the banks become indebted to individuals who are not indebted to them. It is the reverse flow of this credit to the banks through the channels of business that maintains clearance, in the broadcast sense, and permits the credit system to provide for the exchange of goods without the use of money. Since this credit was originally established by business men in the production of goods, they stand ready to receive it again from individuals in the payment for goods, to be used in the cancellation or liquidation of their debts to

¹⁷ "In the first place it creates them in favour of individual depositors against value received in the shape either of cash or of an order (i. e. a cheque) authorizing the transfer of a deposit in some bank (either another bank or itself). . . . But there is a second way in which a bank may create a claim against itself. It may itself purchase assets, i. e. add to its investments, and pay for them, in the first instance at least, by establishing a claim against itself. Or a bank may create a claim against itself in favor of a borrower, in return for his promise of subsequent reimbursement . . ." Keynes, *Treatise on Money*, vol. i, p. 24.

¹⁸ "Apart from this shuffling of debts, all the credit created is created for the purpose of being paid away in the form of profits, wages, salaries, interest, rents—in fact, to provide the incomes of all who contribute, by their services or their property, to the process of production, production being taken in the widest sense to include whatever produces values." Hawtrey, *op. cit.*, p. 40.

the banks.¹⁹ In order to remain solvent business men must re-acquire, from the community, bank credit on the same price basis as that estimated at the time the credit was extended. This applies equally to the individual business man, to an industry, and to goods in general. As we shall see shortly, the total volume of credit received by individuals must be offered for goods, but the distribution of this credit by individuals as between various types of goods may not be the same as the estimates made by the banks and the business men in the extension of the credit.²⁰ This is the crux of the problem of prices, price levels, and business cycles.

The individual recipient of an income in the manner outlined above has two fundamental choices. He may decide either to use his income in the purchase of goods for consumption or he may decide to "save" it. If he decides on consumption, he is offered a wide variety of products. Between them he must make his choice. If in the aggregate he decides to consume just as many of each type of goods as the business men decided to produce, all the goods will be taken off the market. When this is not the case, there will tend to be increases in the prices of those products of which more is wanted than has been produced and decreases in the prices of those products of which less is wanted than has been produced. What the net effect of these price changes on

¹⁹ "The debtors of the banks become such by giving promissory notes for commodities of trade in general use; and they stand ready to receive for these commodities that bank currency which will pay their debts." Colwell, *op. cit.*, pp. 10-11.

"...so that it may be taken as broadly true that the consumers' outlay is applied to paying off indebtedness." Hawtrey, *op. cit.*, p. 42.

²⁰ "We have seen that the real fund employed in the payment of debts is that arising from the transaction of the business by which the debts were created. One circumstance attending this is of very great importance—the fund applicable by the credit system to the payments, is precisely of sufficient amount to pay all the debts, for the credit and debt are counterparts." Colwell, *op. cit.*, p. 197.

the level of prices will be indeterminate but will be influenced by the weights given to the various products in the index and on the way in which the products are related as complementary goods, substitute products and joint products. Even if the total amount spent for consumption goods is equal to the aggregate value of these goods, as estimated at the time of production and on the basis of which payments to the factors of production were made, there is no assurance that serious consequences to prices, employment, business, land and capital values, and banking will not follow. Those products which are left unconsumed will cause a slowing down in the operations of the producers, if not suspension and failure. The latter is almost sure to follow for the weaker members of the industry. This slowing down and suspension will cause unemployment which may last for a protracted period if the redistribution of the workmen, land and capital among the industries meets with considerable friction, as is very likely to be the case. Furthermore, the difficulties of the business men may be reflected in the condition of their banks. The ability of the banks to accommodate other industries would thereby be impaired and production in industries which are otherwise sound might be curtailed, owing to the lack of the customary banking facilities. If the strain on these banks is serious enough it may be transmitted to others through the demand for unusual accommodation. And if it is so serious as to cause bank failures, the loss, if any, to depositors will be one more complicating factor. Perfect clearance, then, between the banks and the public depends in the first instance upon an equality between the amounts which individuals in the aggregate decide to pay out for each type of consumption good and the estimated values of these goods at the time of production.

A failure of clearance to take place may result from a dis-

equilibrium of a larger sort; that is, the total spent for consumption goods may be either larger or smaller than the total estimated value of these goods when produced. We have referred to the primary decision which the individual makes as being that of consuming or "saving". It is, however, really a decision between the purchase of one of two broad classes of goods—consumption goods and capital goods. Stated in another way it is a decision between consuming and owning.²¹ This is true, even though the individual himself does nothing but increase his bank balance. In this case he is doing what Mill so graphically describes.²² He is passing on to another the decision as to the type of good to be purchased. If this is done by increasing the size of his checking account, the bank must take that fact into consideration in its use of these "funds", for he may decide to withdraw them at any time. But he may transfer his right of decision more directly by the purchase of bonds, stocks, mortgages or other instruments. He may do the same indirectly through some type of investing institution, such as a savings bank, trust company, investment trust, life insurance company, etc. No matter which method is followed, income which is not used for consumption is added to the demand for ownership of capital goods or their representatives in the form of securities. Since ownership is desired for the sake of additional future income, the above might be stated as a demand for future income. But future income, or the earning capacity of capital, is dependent on consumption. The price level of securities (using "securities" to mean rights to future earnings of capital goods) is therefore not determined simply by the supply of funds

²¹ "When a man is deciding what proportion of his money-income to save, he is choosing between present consumption and the ownership of wealth." Keynes, *op. cit.*, pp. 140-141.

²² See Appendix IV.

offered for them, but also by the earning power of the goods. As a result it cannot be said that this price level, like that of consumption goods, will tend to increase or decrease solely because the amount of "savings" is greater or less than the value of capital goods, as estimated at the time of production. Since the values of capital goods are derivative values, the price level of securities is a derivative price level and is ultimately determined by the relationship between the production and consumption of consumers' goods and their resulting price level.

If, then, the banks extend credit for the production of goods which do not flow into consumption, this credit will not be liquidated in the cancellation of the borrower's indebtedness, but will increase the demand for securities and tend to raise the level of security prices. At the same time the producers of consumption goods will not be receiving from the community as much as they have paid out. This tends to decrease the prices of their goods, and this will make the value of the capital less and hence the value of securities less. As they go down in price the "savings" which were used to purchase them are wiped out.²³ The effect on the banking system is to leave it with a quantity of frozen loans. For the continuous smooth operation of the credit and banking system, then, it is necessary that the credit extended by the banking system to business for the production of goods flow back again to the banks from the individuals through business in the liquidation of its bank loans.²⁴ In order for

²³ Perhaps this is what Tregoe has in mind when he says, "Its liquidation is the real essence of credit, and without liquidating capacity the thing created is not a credit, but a waste." *Supra*, p. 94.

²⁴ "The great routine of the credit system consists in exchanging commodities and services for credits, and then in distributing these credits widely and minutely in society, whence they flow, under the demands of constant consumption, to the holders of the articles of constant use, by whom they are extinguished in payment of their debts." Colwell, *op. cit.*, pp. 195-196.

this to take place it is essential that the amount which the consumers decide to pay out for consumption goods equal the amount which the business men have paid out as income to the factors of production, first, in order that business may have the means of paying its debts at the banks, second, to avoid price fluctuations, third, to prevent the banks from becoming frozen, and fourth that the values of securities may remain comparatively stable.²⁵ The following diagram is an

²⁵ The position taken here is similar to Keynes's fundamental proposition. He states the condition as follows: "I propose to start... with the flow of the community's earnings or money-income, and with its two-fold division (1) into the parts which have been *earned* by the production of consumption-goods and of investment-goods respectively, and (2) into the parts which are *expended* on consumption-goods and on savings respectively... if the first of these divisions of the community's income is in the same proportion as the second, ... then the price-level of consumption-goods will be in equilibrium with their cost of production... The price level of investment-goods, ... depends on a different set of considerations..." *Treatise*, vol. i, p. 134 (italics his).

In order to understand the full significance of this we must recall that he uses "community's money-income", "earnings of the factors of production", and "cost of production" to mean the same thing. This is also true of the analysis in the text as given above. The result is that if the community's outlay for consumption goods is equal to their earnings in the production of consumption goods, then the sales value of consumption goods will be equal to their cost of production, clearance between the banks and the community will be perfect, (for the credit extended will be liquidated or offset by repayments and the goods will have been exchanged without strain on the banks) and the price level of consumers' goods will remain relatively stable. Keynes, however, prefers to work with the other pair of variables and states as the condition for equilibrium that savings and investment must be equal. This comes to the same thing, theoretically, as the proposition above, for in this case the amount paid out in the production of capital goods (i. e. "investment" as defined by Keynes) is equal to that portion of the community's income which is "saved"; hence the portion which is spent for consumption goods is equal to the amount earned in their production and also to their cost of production. From the point of view of credit control, both pairs of variables must be kept in mind, for consideration of the equilibrium between savings and investment alone, leads Keynes to

attempt to express graphically this most important type of clearance.

Some Conclusions Regarding the "Value of Money"

From the discussion in Part I we may draw some conclusions regarding the nature of the "supply of money", the "demand for money", the "value of money" and the "price level".

In a credit economy the chief form of purchasing power is the credit which individuals are able to make effective as a

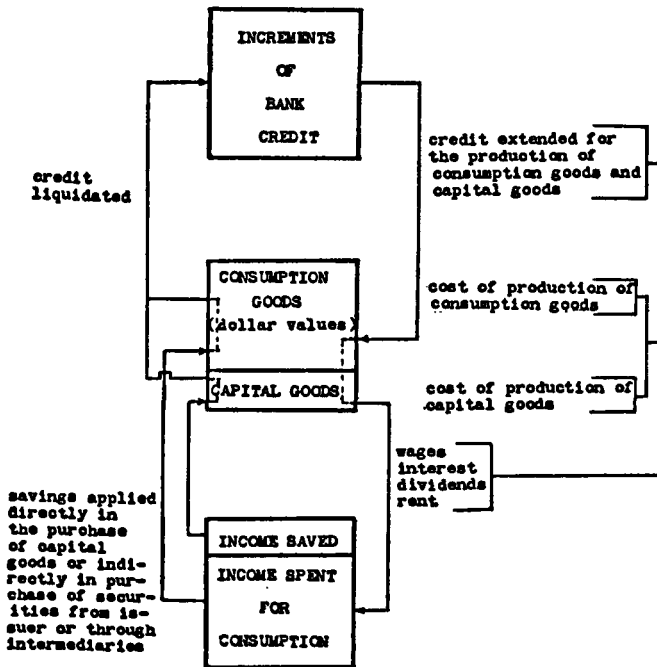
credit-control proposals which are unsatisfactory, as will be pointed out in the discussion of quantitative control. (See also ch. x, p. —, below.)

Cf. the following passage in Wagemann:

"The circular flow of payments takes place particularly along two main streams. One of these streams is the flow of payments from income through expenditure and savings to prices. Every income, and, consequently, the sum total of incomes, is either spent or saved. Expenditure is converted into the prices paid for consumers' goods (food-stuffs, clothes, etc.) or personal services (for example, theatre tickets, hairdressers' charges). Savings are, as a rule, 'invested' at interest. 'Hoarding' in the old sense of the word now occurs, if at all, only among peasants, though at the present time the increased amount of cash in hand that is maintained is temporarily exerting an influence. Investments are partly 'direct'—as, for instance, when a tradesman buys new stock or a manufacturer installs new machinery. In such a case, purchasing power reaches the commodity market direct from the business undertaking, passing through the 'income' stage only on paper, as it were (accumulation out of trading profits). For the most part, however, savings pass by way of income, from which they are shorn away in order to flow straight to the credit markets (money and capital markets) in the most diverse forms. Thence, they finally reach the stage of investment in the commodity and labor markets (passing, to some extent, by way of the stock market.) Thus, they end by being transformed into prices—that is to say, they are used by the entrepreneur to buy raw materials or to pay wages. Income, therefore—whether saved or spent—constantly transforms itself into prices paid for goods and services, these, in turn, are transformed into costs of production, which, finally, are simply the income of the individual business. This circular flow has been expressed in a formula: $\text{Income} = \text{expenditure} + \text{savings}$ = prices = costs of production = income (the equation of exchange). Ernst Wagemann, *Economic Rhythm* (New York, 1930), pp. 47-48.

demand for goods. That which they have actually used to command goods may be referred to as effective credit. That which they possess and have not exerted may be called "potential credit." It may be inferred that there is a larger or smaller volume of potential credit lying dormant at all

CHART II
THE EXTENSION AND LIQUIDATION OF CREDIT



times. If by "purchasing power" is meant this broader aspect of credit, we can agree with the statement made in the MacMillan report, that "obviously the general price level must be governed by the volume of purchasing power directed to the buying of current output relative to the volume

of this output".²⁶ It is, therefore, possible that an increase in prices may occur without a previous increase in bank credit. For, when purchases are first made on credit, no bank credit need be involved. If a consumer has credit with a retailer, or a retailer with a wholesaler, or any other business man has credit with another, a purchase may be made without recourse to bank credit, nor, indeed, need bank credit be increased at all. It is only when the bank is called upon to substitute its credit for that of the individual that the total of bank credit is affected. This may occur when a business man prefers to be indebted to the bank rather than to another business man, because by paying off the account which he owes he may gain a discount which is larger than the amount of the bank interest. It may occur also when a business has credit which the bank is able to recognize because of its knowledge of the affairs of the business while those from whom it wishes to make purchases have not this knowledge. The third need for bank credit arises when a business concern has payments to make, not to other businesses, but to the individuals who supply the labor and capital for the enterprise. To these the business concern cannot give its own obligation for a generally acceptable medium of exchange is required. Thus it is that bank credit is a derivative of business credit, and as such expands with the expansion of trade and business.

The real problem of money and price levels, then, is not bank credit, but trade and business and the conditions under which this potential credit is turned into an effective demand for commodities. The problem is thus put on a plane of the adjustment of prices and costs, production and consumption. Given favorable conditions, business men will make purchases and will not be deterred by a lack of money for they have in

²⁶ A Report of the Committee on Finance and Industry, *Cmd. Report 3897* (London, 1931), p. 93.

their own account books, their notes and drafts the necessary media of exchange. Their resort to banks will facilitate eventual offsetting of the debts thus incurred. They need not be deterred by a rise of prices, so long as the prospect of profit apparently exists. It is this calling into use of potential credit which is the initial cause of the price rise and as the rise proceeds, their debts become correspondingly larger, and more demands are made on the banks. Thus bank credit expands. Though the increase in buying and the increase in prices start in some one commodity or group of commodities, it is likely to become cumulative for the rise of prices increases the potential credit of those affected and they have at their command a medium of exchange not dependent on money. The fact therefore, that all prices, or nearly all, increase with an increase of the index number is no proof that the cause of the increase is outside the prices or on the supply side of an equation of exchange which contains only gold and bank credit. Neither is the concomitant increase of bank credit an evidence that the cause is on the "money side", for this increase is a result of the sanguine view which business men take of profit possibilities.

The operation of a modern banking system is such as temporarily to encourage such an expansion in the use of business credit and hence in prices and bank credit. The more widespread the movement, the easier it is for the banks to maintain an increased volume of bank credit. Since bank credit is supported by clearance, the more banks there are engaged in the process of expansion, the more likely any one bank is to receive checks on other banks to offset the checks drawn against its increased loans. Even though a bank which is meeting the increased demands of its customers for discounts and loans is faced with an unfavorable clearings balance, its activities will lead to a net expansion in the total volume of bank credit in circulation. Let us suppose that in

order to meet this drain on its own reserves, it sells some bonds. The checks which were drawn against the new loans which it made will find their way into some other bank, providing this bank with "cash" or surplus reserves which will be used to increase by an equal amount its own loans, discounts, or investments. Thus the deposits of the first bank are at the same level as before it made the additional credit extension while those of the second bank are increased by the amount of new loans. Looking at the bank assets, what has happened is that the total earning assets of the first bank are the same as before except that "Investments" have decreased and "Loans and Discounts" increased by the same amount. The total earning assets of the second bank have been increased by the amount of the new loans. The net effect of this transaction is the same as if the first bank had added to its loans and discounts, thus permitting its customers to draw checks against it for an increased amount. When these additional checks are presented to it for payment, it settles by transferring to those presenting them part of its bond portfolio. There would actually be a triangular or more complicated settlement involved but to the original bank, in its relations with the rest of the banking community, the transaction becomes analogous to the simplified version.

Many authors have realized that a price rise can thus become cumulative and that such a rise will be accompanied by an increase in trade and production and bank credit.²⁷ But

²⁷ For example:

"There is an inherent tendency on the part of traders to borrow more and more. This tendency works just as freely as if the stabilizing influence of the gold standard were not present, *until* the demand for cash for circulation occasions an actual shortage in the banks' gold reserves." Hawtrey, *op. cit.*, p. 30 (italics his).

"The tendency under the keen spur of a developed banking system to carry enterprises based upon credit beyond the point of safety, the infection of an entire community by the fever of speculation, are too familiar for comment, and the errors of bankers in aiding and encour-

the implications have not always been clearly recognized and some false conclusions have been drawn, of which the most popular is that the process can be reversed, namely, that an increased volume of bank credit will increase prices and the volume of trade. This thesis we shall examine in a later chapter. Another inference which has been drawn from the movement of the price index is that its fluctuations represent changes in the value of gold.²⁸ The danger involved in this view is that of tracing price fluctuations to gold. It is said that because the value of gold fluctuates the level of price changes and the economic system is thereby subjected to all the evils which price fluctuations imply.²⁹ If the price level is to be referred to as representing changes in the value of money it is better to speak of changes in the value of the "money of account." The increase of prices, the expansion of credit and hence debt, may influence the value of gold, for if the clearance breaks down, gold payments are resorted to. In such a case its value may rise because of the increased demand. The concomitant decline in prices should not be thought of as being caused by the changed value of gold for both declines are a result of the lack of credit and debt control.

It follows that it is exceedingly difficult, if not impossible, aging that which they should have striven to repress or control, have at times brought the utility of banking itself into question. C. F. Dunbar, *The History and Theory of Banking* (New York, 1922), p. 7.

²⁸ "The periodic credit expansions and credit contractions, on the other hand, and the changes in the value of gold which accompany them, must be regarded as normal." Hawtrey, *op. cit.*, p. 419.

²⁹ "Most people, for example, who in recent years have called attention to the appreciation of gold have given an explanation which implies that there is a very direct relation between the quantity of metallic money and the general level of prices. They have argued that the supplies of gold have fallen off, that gold is hoarded by governments and banks, that silver has been demonetized, whilst on the other hand the volume of trade or the amount of exchanges to be effected has increased." Nicholson, *op. cit.*, pp. 143-44.

to estimate statistically the total volume of purchasing power available at any given time. Probably the least satisfactory method of all is the addition of the quantity of gold to existing credit instruments. The force of this becomes particularly evident when it is recalled that a credit instrument is an acknowledgment of debt which, in other terms, is that portion of potential credit which *has already been exerted as effective purchasing power*. Thus the difficulty in estimating the effect of credit on prices is seen to lie in the difficulty of estimating the disposition of members of the community to exert their potential credit as a demand for goods.

The "demand for money" is likewise a more complicated matter than it appears to be at first sight. Gold, as a medium of exchange becomes practically non-existent. The demand for media of exchange is satisfied by credit instruments which under certain conditions cause an active demand for gold rather than for other goods. These conditions are determined by the state of clearance of bank credit, which in turn is determined by the degree in which trade is reciprocal. It cannot be held, therefore, that a mere increase in the physical volume of trade increases the demand for gold. While it is generally conceded that the demand for gold as a medium of exchange is practically nil in a community having a well developed banking system, it is held that the expansion of production and trade causes an increase in the demand for bank reserves.³⁰ This is a result of the expansion of bank

³⁰ "The expedient to which banks almost invariably have recourse is to aim at preserving a certain fixed proportion between their reserve of cash and their liabilities." Hawtrey, *op. cit.*, p. 27.

Cf. the following:

"Business men who see a prospect of profit in enlarging their purchases have no difficulty in securing means of payment if their bankers share their confidence. The physical volume of trade and prices can enter an ascending spiral, every increase in the one promoting an increase in the other. As the dollar volume of business expands, a new series of adjustments is worked out in the distribution of coin and paper

credit which accompanies the expansion of the volume of goods. As long as this is interpreted in purely quantitative terms, i. e. a comparison of the total volume of bank credit with the total volume of gold, it would seem that improvements in banking technique could be made to reduce this demand.

As an example of what can be done in this direction witness the change brought about in reserve requirements under the federal reserve system. Prior to the federal reserve act a national bank in a town or small city needed 7.417% cash reserve, a bank in a reserve city, 15.63% and a bank in a central reserve city 25%. Under the new system the cash needed as reserve for deposit in these cities respectively is 2.45%, 3.5%, and 4.55%. It would seem that as far as legal reserves are concerned, the banks, at least in the United States, have been given sufficient leeway to expand credit. They have not, however, demonstrated an ability to control this expansion so that it will not result in a shifting about of reserves leading to a collapse of the credit structure.⁸¹

money between the banks and the public, in the issue of bank notes, perhaps in the international distribution of gold, certainly in the volume of deposits subject to check, and in the velocities of circulation. Monetary and banking conditions may be said to 'permit' the developments, and even to 'favor' them; but the 'active' role is still played by prices and the physical volume of trade." Mitchell, *op. cit.*, p. 134.

"In numerous business cycles, we shall find that prosperity wanes from other causes before the dollar volume of trade has attained dimensions which overtax the monetary and banking systems. Many recessions show slight traces of monetary stringency. Thus the period when monetary and banking factors dominate prices and the physical volume of trade are brief, and they recur less regularly than periods of depression, revival, and moderate prosperity, when prices and the physical volume of trade play the 'active' roles." *Ibid.*, p. 135.

⁸¹ "Credit suffers in any event from the defect of being too elastic, and if the substratum of legal tender money is also made elastic, this defect is aggravated. If treble the amount of legal tender money, and therefore treble the amount of credit, can be created with a given amount of gold, the danger of a given gold movement leading to a state

It is often suggested that the gold standard be abandoned because the supply of gold does not keep pace with the need for bank credit. As an alternative it is suggested that an alteration in banking practice be adopted to alleviate the obviously ridiculous situation of an entire economic structure being prevented from functioning because of the lack of an *unused gold reserve*. The qualification "unused gold reserve" is important, for in the sense here used, it is assumed to be merely a limiting factor because it is not a sufficient percentage of total bank deposits. As a matter of experience, it is found that gold *because of its movement* acts as a check.

The real limitation to the further expansion of trade and credit lies in the inability of an intricately interdependent debt structure to maintain itself by the continued flow of trade and liquidation of debt by offset. This throws the responsibility for liquidation on the banking system which must make good the erroneously estimated values in gold. Just as the expansion of credit is cumulative, that is, purchases on credit making possible further purchases on credit, so the failure to pay debts leads to the failure of others to pay, thus forcing a cumulative liquidation of goods at necessarily lower prices. A basic cause of the decline of prices is maladjusted expansion of prices.²² In this expansion prices

of excessive inflation is increased. If all the gold-using countries managed their currencies on this plan, the periodical expansions of credit which take place would be greater than they already are, and the financial crises in which they so often end would be correspondingly more severe." Hawtrey, *op. cit.*, p. 87.

For a discussion of the lack of importance of cash as a limiting factor see Laughlin, *op. cit.*, vol. ii, ch. xxvi.

²² "A credit expansion in one of the countries, involving an increase in the consumers' outlay, will raise prices, but the prices of different commodities may rise in very unequal degrees." Hawtrey, *op. cit.*, p. 69.

See also F. C. Mills, *Behavior of Prices*, pp. 285-6.

"Price stability and the normal functioning of the economic system depend as much upon the maintenance of established internal relations

not only rise in unequal degrees, but some are sustained by borrowing at levels which eventually will not be justified in the light of sales. The longer prices are maintained by borrowing, the more serious the reaction.

(more exactly, perhaps, upon the avoidance of violent changes in these relations) as upon external equilibrium of the kind associated with a stable price level. The index of dispersion is one important measure of the degree of internal change between specific dates. The excessively high level of the index of dispersion between November, 1920, and September, 1921, is perhaps more immediately significant of the troubles which afflicted business at that time than is the falling index of general prices. And that the troubles of the business world since 1921 have been relatively mild ones is evidenced by the minor fluctuation of the dispersion index since that year.

"Internal instability of the type which an index of dispersion would reveal may appear as a result of a broken and uneven price advance, as an accompaniment of an irregular price decline or it might possibly develop with no appreciable change in the price level."

As examples of the different degrees in which prices change, the following may be cited from Mills's study. *Ibid.*, Table XII, p. 528.

AVERAGE PERCENTAGE CHANGE BASED ON PRECEDING LOW (HIGH)			
Corn	9 cycles	88% rise	40% fall
Wheat	6	121	36
Cattle	10	48	24
Cotton	9½	115	42
Wool	8	78.6	26.5
Beef	10	46.6	25.3
Ginghams	10	45.6	22.3
Print cloths	9½	108.7	42
Bituminous coal	9½	59.4	27.4
Petroleum	8	124.4	39.9
Pig iron	10	79.4	39.2
Copper	10	65	33.2
Silver	8	41.5	23.6
Nails	9	60.5	29.3
Fence wire	9	48.3	23
Quartered oak	8½	47.1	13.2
Pine boards	7½	32.7	8.2
Brick	9	91.7	35.3
Leather, calf	10	49.2	19.1
Paper, newsprint	7½	4.4	19.8

See also footnote 9 in this chapter.

Not only are the difficulties of debt repayments felt cumulatively by the business community, but they are transferred to the banks, which causes still more serious reactions on business. A bank which finds its clearance balance upset by the nonrepayment of loans is in a different position than the one discussed on page 136 above. In that instance the unfavorable clearance was due to expansion of credit and was met by the sale of assets. It was seen that from the point of view of the banking system as a whole, the additional credit provided the "cash" for the purchase of the assets disposed of. But the present situation arose, not because credit is not expanding at parallel rates in different banks, but because of the non-repayment of maturing loans. If an attempt were made to dispose of assets there would be no corresponding "cash" to absorb them. It will not suffice to say that the credit originally extended must still exist somewhere in the community for, as we have seen, it was absorbed by the acquisition of the bonds by the second bank. Disposal of assets at this time results in a net increase in the amount of bonds offered for sale. The other alternative which the bank has is the restriction of the total amount of its loans. Thus the difficulties in which one or more industries find themselves are transferred to others which may heretofore have been in sound condition. The latter are now deprived of the customary banking facilities and must, therefore, restrict their operations. The scramble for reserves, or "cash", in which the banks now engage, spreads the difficulties to other banks until the whole business structure may become involved. The net result is a decline in the securities markets, a general tightening of credit, and a slowing down of business operations.

This whole range of interrelationships and reactions has not received due attention because the theory of credit has been dealt with too much in a quantitative way. Emphasis

has been placed on the total volume of production instead of on the adjustment of production; on an index of prices, instead of on the relationships of prices; on the total volume of credit, rather than on the debt burdens of individuals, corporations and industries.

When, however, a central banking system exists the question of bank reserves becomes one of the relation of central bank credit to its gold holdings. The movement of reserves between banks takes the form of transferring central bank liabilities from one bank to another and the sufficiency of gold reserves is determined by the necessity of gold exports to other countries. In addition to the demands for gold as a medium of exchange and for bank reserves determined by some percentage of bank deposits there is a third demand. This is the reserve required for bank notes. In modern industrial societies the issue of notes is in practice a monopoly of the central bank. The liabilities of these central banks serve at once as reserves for the commercial banks and as the hand-to-hand currency for the public. The result is that an increase of the money in the hands of the people acts on bank reserves in approximately the same way as a drain of gold on a banking system without a central bank. For example, in the United States, federal reserve notes form the largest part of the circulating medium and are by far the most susceptible to increases and decreases. If a depositor in a New York City bank desires to withdraw \$100 in notes, the bank's deposits are reduced by \$100, and its reserve requirements by \$13. But since additional currency is obtained by drawing against its deposit at the federal reserve bank, its reserves are thereby reduced \$100, leaving it \$87 short in its reserve account. This drain of cash into circulation is variously stated as a result of a constant proportion which people keep between their bank balances and their pocket money.²³ As prices rise or trade expands there is an

²³ "The currency in circulation (notes and coin) should in the main

increased need for hand-to-hand currency.⁸⁴ While it is true that this increased demand for hand-to-hand currency might occur, it would be met, as indicated above, by an increase of central bank liabilities. These, we have seen, do not necessarily bear a fixed relationship to gold.

Finally, a demand for gold is said to arise from the external drain, or the movement of gold to other countries. This is probably the most important demand for gold on any individual banking system. As we have seen above, the responsibility for meeting this demand falls on the central bank. This demand, however, cannot be determined by a study of the total volume of central bank credit outstanding. As indicated previously, it is not a matter of the proportion between total quantities. As a result of unequal changes in prices, production, or consumption of various commodities or groups of commodities, with a resultant failure of credit to clear, there may occur a greater drain of gold at a time when the percentage of gold reserve is higher than at another time when clearance is more perfect and the reserve percentage lower. If trade conditions were such that the continuing purchase and sale of goods; production and consumption flowed without interruption, and the banking systems of the world were improved to permit clearance of bank credit to be developed to the fullest extent, reserve requirements would be reduced to such a small percentage of the volume of bank credit that, except for war periods, they would not be a limiting factor to the amount of bank credit which might be in use.

have increased in about the same ratio as the balances at the banks which can be disposed by cheque." G. Cassel, *Money and Foreign Exchange After 1914* (New York, 1923), p. 30.

⁸⁴ "Consequently, when employment is good and wages high, a certain amount of the money paid out each week to the workmen fails to come back to the banks in the following week, and there is, in fact, what is called a withdrawal of money for 'internal circulation'." Hawtrey, *op. cit.*, p. 22.

PART II
QUANTITATIVE CONTROL IN PRACTICE

CHAPTER V

THE CRITERIA AND INSTRUMENTS OF CONTROL

Introduction

CREDIT control is usually expressed in quantitative terms. The nature of credit, as discussed in Chapter II, has been given little attention, and banking as a process of offsetting the debts of the community has not been taken into consideration. Bank credit is looked upon as a total quantity which must be adjusted to external criteria. It is usually implied that this total quantity may be adequately controlled by changes in the liabilities of the central bank. On the assumption that there is a close relationship between the total quantity of bank credit and the level of prices, the predominant aim of current credit control proposals is the maintenance of the stability of the price level.

*The Criteria of Control*¹

Three trends of thought have been mainly responsible for

¹ A review of the reasons for open market purchases and sales by the federal reserve banks is given in the *Hearings before the Senate Subcommittee on Currency and Banking on S. Res. 71*, Seventy-first Congress, third session, Part vi, answers to question 1, questionnaire # 9, pp. 795, 796. Summarized these are:

Reasons for purchases;

- (1) To enable the federal reserve banks to meet expenses and dividends
- (2) To relieve a tendency to higher interest rates
- (3) To permit member banks to liquidate indebtedness
- (4) To encourage foreign borrowing
- (5) To induce business recovery
- (6) To place reserve banks in a position to check later speculation
- (7) To facilitate the financing of agriculture
- (8) To prevent gold imports
- (9) To assist exports

this attitude. As pointed out above, one of these grew out of experiences with war finance which led to inconvertible paper money and inconvertible bank credit. English banking experience during the Napoleonic wars led the Bullion Committee to conclude that the depreciation of the pound sterling, reflected in the rise of prices, the decline of the pound exchange rate and the rise of the price of gold were due to excessive issues of Bank of England notes. They therefore recommended the reduction of the volume of paper

- (10) To strengthen foreign exchanges
- (11) To preserve the gold standard
- (12) To pave the way for rediscount reductions
- (13) To check the decline of commodity prices
- (14) To prevent the absolute collapse of the security market
- (15) To prevent a money panic

Reasons for sales;

- (1) To assist treasury redemption
- (2) To restrain production
- (3) To check commodity inflation
- (4) To make rediscount rate effective
- (5) To check speculation
- (6) To restrain business
- (7) To force an increase in member bank borrowing
- (8) To force an increase in interest rates
- (9) To make member banks scrutinize loan applications more carefully

See also:

H. L. Reed, *Federal Reserve Policy, 1921-30* (New York, 1930), pp. 12-15-25 *et seq.*

B. Strong, *Interpretation of Federal Reserve Policy*, edited by W. R. Burgess (New York, 1930), pp. 211, 234, 257, 258.

The MacMillan Report, pp. 94, 96, 97, 121, 128.

R. G. Hawtrey, *op. cit.*, pp. 22, 26, 27, 75, 110.

W. E. Spahr, *The Federal Reserve System and the Control of Credit* (New York, 1931), pp. 16, 19, 24, 25, 26.

Lionel D. Edie, *op. cit.*, pp. 34, 47, 111.

B. H. Beckhart, *op. cit.*, p. 517.

W. R. Burgess, *op. cit.*, ch. xi.

Willis and Steiner, *Federal Reserve Banking Practice* (New York, 1926), p. 529.

A. C. Pigou, *op. cit.*, pt. ii, ch. vi, art. 9.

money and a return to convertible bank notes.² The same phenomena and the same suggested correctives have characterized every similar period since. The second bulwark of the quantitative approach to credit control is to be found in the theory of value applied to money which, as we have seen above, contains serious errors when the chief media of exchange are credit instruments. The third source from which the quantitative approach arises is the realization of the bankers that the loss of reserves requires a reduction in their liabilities. The real cause of the loss of reserves, however, as pointed out above, lies not so much in the total volume of bank credit, as in the assets upon which such credit rests. The theoretical basis of quantitative control appears, therefore, to be insubstantial.

The first two of the above approaches direct attention to price levels and production, as the guides to banking policy, while the third emphasizes the importance of reserves. But as long as the control of credit is regarded quantitatively, the banking system is offered a choice between one of three policies. It may contract credit, expand it, or leave it unchanged. If different criteria indicate opposite policies, one policy must be adopted and the others disregarded. It would appear, however, if we take the point of view of the banker, that the gold reserve must be protected. Reasoning from the classical specie-flow analysis, we will find no conflict between the policies indicated by the various criteria. Since gold movements are preceded by exchange rate fluctuations, the movements of the exchange rate become more sensitive guides than are gold flows and dictate the same policy.³

² Bullion Report, as reprinted in *The Paper Pound*, E. Cannan (London, 1919).

³ "Thus the Bank of England has felt in the past, as we have been told in evidence, that it will be pursuing the safest course if it keeps its eye primarily on the movements of the foreign exchanges as the indicator of the balance of international payments, and then effects its changes

When the fluctuations of the exchanges are analyzed they are found to rest on the supply of and demand for foreign exchange. These in turn are affected by relative price levels so that, for example, rising prices will lead to an unfavorable balance of trade, unfavorable exchanges and outflow of gold. Moreover the interpretation of price level fluctuations as being the inverse of changes in the value of money and the interpretation of the demand for money as being equal to the volume of goods, suggest the volume of production as the criterion for bank policy. Thus changes in the level of prices or production become more sensitive guides and suggest the same policy which exchange rates and gold movements would later indicate. Leaving aside for the moment doubts and objections regarding this analysis and other guides to bank policy, let us examine more carefully into the nature of prices and production, as theoretical criteria, and the mechanism by which the desired objectives are to be accomplished.

1. The Price Level

As a guide to banking policy the "level of prices" is a very nebulous concept. There are many "levels of prices".⁴ They do not move in the same directions, or to the same degree. During the years 1928 and 1929 the price level of shares was going up in the United States. The price level of commodities at wholesale was at the same time relatively stable, with a slight tendency toward decline. If the central bank were to increase, decrease, or hold constant the total volume of credit, which of these price levels should be taken as the criterion? If commodities are to be the guide, the action of the stock market should be totally ignored. On the other hand if the stock price index were followed, the in bank rate mainly in response to such movements." *Macmillan Report*, pp. 96-97.

⁴ See Keynes, *Treatise on Money*, ch. v.

general restrictions imposed upon business would bring sufficient opposition to the policy to cause federal reserve officials to abandon it.

This difficulty is usually met by the statement that there is a constant relationship between the various broad groups of prices, such as commodities at wholesale, commodities at retail, real estate, stocks, bonds, etc. and that one group of prices is basic. The group usually selected as an index seems to be commodities at wholesale. Keynes emphasizes commodities at retail, or rather a consumption index, in his theoretical chapters, but in his later discussion of the application of the theory he returns to the wholesale index.⁵ Even though the problem is thus narrowed, the inherent difficulty still persists, for a wholesale index is a composite of subsidiary groups. At the beginning of a rise in the general index, it is found that some groups are rising, others falling, and still others registering relative stability.⁶ By the time

⁵ See especially vol. i, ch. iv, secs. 1, 2 and vol. ii, ch. xxxviii, p. 391 and vol. ii, ch. xxxvi, p. 338 where he admits that a wholesale price must be used.

⁶ Dr. F. C. Mills's *Behavior of Prices* is of valuable assistance in interpreting the use of an index of wholesale prices as a guide to regulating the total quantity of credit. Of particular importance are the following statements: "The averages for 56 commodities are negative in sign, which means that these articles have preceded the general price index, on the average, in their upward movements. These constitute a trifle over a quarter (26.8 per cent) of the total number of commodities. An upturn of the general index, it is apparent, is due in general to price changes in a distinct minority of the commodities included in the index," p. 102.

As to the number of months over which an upturn in prices lasts, he says: "If nine extreme cases be ruled out, the average times of revival of the remaining 200 articles fall between -7 and +15, a range of 22 months," p. 102. (The time here referred to is the number of months preceding or following the turn of the index. The period studied is from 1890 to 1925, covering 10 cycles.)

Similar data taken from other tables indicate that for commodities of 15 representative industries the revival lasted from - 5.5 to + 13.1

that the general index has risen to a point where it is about to reverse its direction, it is found that nearly all of the price groups have participated in the rise.⁷ The inference is that a price rise once started becomes cumulative. This suggests a return to the beginning of the rise in an effort to prevent it. But there we find that no one policy is applicable to all price movements.

It has been suggested, however, that this is one of the advantages of the quantitative control of credit. It is

months (p. 100). For the 66 most consistent commodities (out of a total of 209) the average deviations were from - 7 to + 11 months (pp. 103-4).

Further, the variations in the duration of the rise were from 13.7 to 57.6 months for 15 representative commodities (p. 107).

With such differences in the time of revival and the duration of the rise, it might well be asked, just when and to what extent should a restrictive credit policy be instituted. The study of a declining index in terms of its components gives similar results.

⁷ As to the degree to which 209 commodities conformed to the movements of the index, Mills found that during 11 price revivals, 80% might be said to have participated, 10% remained constant, 5% sagged, and 5% continued a previous rise. (*Ibid.*, p. 99.) During recessions, 78% had a specific date of turning which corresponded to the decline in the general index, 11½% remained constant, 4½% continued a previous decline, and 6% were found to be rising (p. 116). This conformity, however, must be interpreted in the light of the conditions of timing and duration indicated in footnote 6, above.

Further, during 10 cycles indicated by the index,

53 commodities showed 10 cycles			
46	"	"	9 or 9½ cycles
32	"	"	8 or 8½ "
18	"	"	7 or 7½ "
12	"	"	6 or 6½ "
14	"	"	5 or 5½ "
11	"	"	4 or 4½ "
9	"	"	3 or 3½ "
9	"	"	2 or 2½ "
5	"	"	1 or 1½ "

Twenty-six agricultural commodities and foods failed to conform to the standard schedule. (*Ibid.*, p. 528.)

claimed that this method is democratic, affecting everyone alike.⁸ But is credit democratic? Should those producers who are confronted with price declines be subjected to the same restriction as those who are enjoying price increases? Our analysis of the nature of credit would indicate that not only should those businesses which are faced with declining prices be subjected to the same restrictions as those with rising prices but should be treated even more severely. Furthermore, it is not clear that those industries in which prices are increasing should be restricted at all. The function of price is to call forth increased production when demand increases and to restrict production when demand declines. An increase in the price of some commodity or group of commodities may mean that public preference is shifting to them. A decline in the price of some commodity or group of commodities may indicate a loss of public favor for that commodity or group. In this case banking policy toward these commodities should be *more* cautious than in the case of those in which rising prices prevail, for those which are on the decline are the ones which will cause difficulties to the banks. Thus a price index is misleading; for when some prices are increasing and others decreasing, when some commodities are replacing others, when old favorites are dropping out and new products being added, the net effect on the index will depend on the relative weights assigned and in fact on whether the new products have yet been included in the index.⁹ We cannot be certain,

⁸ "A rate control of the volume of credit has a variety of advantages. One is that it is democratic." Strong, *Interpretation of Federal Reserve Policy*, p. 194.

⁹ "This is simply another form of a difficulty long familiar: that, over periods of time, the composition and relative importance of the items entering a price index necessarily change, in ways that cannot be allowed for adequately by statistical methods." J. W. Angell, *Theory of International Prices* (Cambridge, 1926), footnote on p. 391.

"It is all very well to say that the value of the unit must not vary, but

therefore, that those prices which we find to have been the original cause of an increase in the index, really should be curbed. The only alternative which has been suggested is to wait until the cumulative rise becomes evident and then institute restrictive measures. But by that time the damage is done, for prices then bear new relationships to one another and we are faced with the same problem as to whether a single policy, designed to suit the average, will correct the situation.

The stabilization of the general index as the only objective of banking policy unflinchingly raises the question as to whether it makes any difference if those prices which have risen most will be forced down, or whether the pressure will fall on those prices which have risen little or not at all, thus offsetting the rise in others. It has been maintained by some that this is not the way the restriction works; they hold that it does not fall unequally on different prices, but causes a proportionate decline in all.¹⁰ But, regardless of how the reversal in the general index is brought about, even when it is relatively stable there is no assurance that prices are in such adjustment as to prevent an eventual breakdown in the smooth flow of products from production to consumption, with a concomitant breakdown of the debt structure which inevitably leads to banking difficulties. Credit control theory thus forces us to give first consideration to the start of a price increase, but when we examine the situation then presented we realize that it is not so much a matter of the

there is no single interpretation of the value of the unit. Its value in coals may be stable, while its value in trousers may rise or fall." Hawtrej, *op. cit.*, p. 5.

¹⁰ "But should an index number show a rise in the price level and then some central authority, like a central banking system, decides to use the existing mechanism to force a fall in the index number, the pressure is exerted all along the line, on all of the 55 commodities and many others—at least theoretically—and not on one or a few to offset those which have risen." Spahr, *op. cit.*, p. 9.

movement of the general index as of the relationship between prices.

The quantity theory of money, however, tends to minimize the significance of price relationships, for if the price of one commodity rises, that need not cause an increase in the price index. This position is arrived at on the assumption that the total quantity of money is fixed, so that when more is spent for one commodity less must be spent for others so the index will be unaffected. But this is not so. Even if spending more for one commodity required spending proportionately less for others, the shift of purchasing power from one commodity to others would not necessarily leave the index unchanged, because different commodities have different weights in the index. Under a credit system, however, the rise of one price does not require the fall of others. Since credit is extended on the basis of prices, the increase of a price will call forth more credit, thus adding to the total volume of purchasing power, and making it possible for the increase of one price to increase the index. The correct banking policy should not, in such a case, consist in a general restriction but in testing the justification of such an increase by the volume of purchases in relation to production of the commodity. In this way a decision may be reached as to whether banking liabilities may safely be increased on the basis of the increased price. The same reasoning applies to all prices and not merely to those which are increasing.

Until some different method of controlling production and consumption is agreed upon, prices will continue to fall and rise among themselves. The shifting in the positions of prices will cause shifts in the indexes of prices, because different commodities have different weights and because they are the basis on which credit is extended, first by business men and later by banks. Gains and losses will be the

lot of the businesses involved. But banking policy should aim, in so far as possible, to isolate itself from the risks of business by being cautious in the extension of its liabilities particularly on the basis of rising prices. Rising prices which call forth the use of more credit become the basis of a cumulative rise in all prices and in bank credit, thus leading to a badly adjusted price and debt structure. If carried far enough there may develop such a divergence between the prices of consumption goods and the amount of income devoted to the purchase of these goods as to cause a breakdown of a more serious character.

2. Production

Recently attention has shifted from prices to production as the guide for banking policy. Both, however, are derivatives of the "value of money" idea. If the value of money is determined by its supply and demand, and if the volume of goods determines the demand for media of exchange, a stable price level indicates that the supply of "money" is evidently in adjustment with the demand. On the other hand, if the volume of credit is increased *pari passu* with the volume of goods, the value of money or the level of prices will remain stable. The secular growth in the volume of production is commonly estimated at between three and five per cent per year.¹¹ Sometimes the volume of trade in physical terms is substituted for the volume of production.¹²

¹¹ "It might at least be held that there was no need for expansion of credit at a more rapid rate than the annual secular growth in the physical volume of trade say from 3 to 5 per cent." Reed, *op. cit.*, p. 71.

"The most important legislative mandate would be a provision that one of the objectives of Federal Reserve policy shall be the maintenance of the annual rate of growth of volume of credit in the United States in balance with the long-term average annual rate of growth of production in the United States." Edie, *op. cit.*, p. 47.

Report of the League of Nations Gold Delegation, p. 32, par. 109.

¹² "Credit should grow at a pace adequate to meet the needs of trade." Edie, *op. cit.*, p. 34.

This substitution may be deliberate or it may be unconscious. Although trade and production are obviously not the same thing, if it is assumed that velocity of trade automatically induces a like velocity of circulation in credit, the use of production as a guide becomes more significant. Under this assumption, when goods are produced their value counterpart would be added to the total volume of credit, and as the goods changed hands in trade, the value represented by them would likewise change hands. If the goods do not change hands, the credit is frozen. It is no longer credit, in the sense of being a medium of exchange, but rather a representative of ownership—maybe bank ownership.

Both prices and production may be taken as broadly indicative of whether or not credit expansion is very far wrong. These, however, furnish only a very broad indication since *they are too clumsy and generalized* to serve as a working guide as to when and to what extent credit would be increased.

Moreover, past experience, represented by the secular increase of production in England and the United States over a limited period of their growth, does not form a satisfactory guide for future production. It is representative of an era in the industrialization of these countries, under a certain type of economic organization. It is an average of periods of much more rapid increase and periods of much less rapid increase, or actual decrease. There is no reason to suppose that the average of these alternating periods is the rate of growth which would prevail if there were no alternating periods, and it is unquestionably one of the purposes of credit control to eliminate such alternations. Further, there is no reason to suppose that the rate of expansion in production would be the same in all stages of the industrialization of a country or throughout an economic area. If we

generalize the experience of individual industries it is more likely that the growth would follow a logistic curve.¹³

The secular growth of production is furthermore inadequate as an immediate or day-to-day guide to banking policy because it is too simple. If bank credit is to expand by 4% during a year, then it should expand by 1/90 of 1% per day. Thus the day's work of the central bank is cut out for it in advance. Nothing whatever is said of the assets upon which this expansion is to take place. Certainly, however, it must make some difference what the bank portfolio contains; what is being produced must also make a difference. It is just here that the most serious objection to this banking policy lies. An increase in the physical volume of production is no guarantee of an equal increase in value. A banking system in which the total volume of credit was expanding at a rate equal to the rate of expansion in the total volume of production might still find itself in difficulties if some of the goods remained unsold. These unsold goods would cause some producers to fail to pay and would cause some banks to lose their reserves, and thus the process of liquidation, failures, restriction of banking facilities would be started, followed by the inevitable decline of prices, production, and employment.

Comparison, therefore, of prices in general and total bank credit is inadequate, and comparison of total production and total bank credit is likewise inadequate. Individual prices must be studied in their relation to other prices, production of individual commodities in their relation to the production of other commodities must be analyzed, and both the price and the production of a commodity must be related to the volume of sales or the flow from production into con-

¹³ R. B. Prescott, "Law of Growth in forecasting Demand," *Journal of the American Statistical Association*, Dec., 1922, vol. xviii, pp. 471-479. (See Mitchell, *op. cit.*, p. 224.)

sumption, before an estimated value of the commodity may be added to bank credit.

3. Money Market Conditions

Another group of criteria center about money market conditions. It is suggested that the amount of credit be varied in such a manner as to offset the seasonal flow of funds. Government financing if not offset, would occasionally upset the equilibrium of the money market so it should sometimes be the guide. Too often government financing, other than for quarterly periods, has played too large a part in the policy of central banks when such financing has been large and protracted. This is the usual situation in times of war. There have also been times in the United States when the operations of the federal reserve banks have been directed toward easing money market conditions in order to facilitate the flotation of foreign bonds. Finally, it is sometimes held that a central bank finds it necessary to purchase securities to offset declining discounts in order to maintain contact with the market.

An important phase of the money market criteria centers about the use of interest rates as a guide to central bank policy. It is usually held that the central bank rate should lead the market rate. In the United States it is felt by some that the federal reserve rate should fall between the rate on commercial paper and that on bankers' acceptances. Another application of the interest rate criteria is that the central bank should adjust its rate in relation to the rates prevailing in other countries. Under the classical specie flow analysis, the rates of interest prevailing in the money market of a country, would be related to the exchange rates and gold movement, but again we must guard against uncritically applying this analysis to modern conditions.

4. Future Federal Reserve Policy

The policy of the federal reserve banks to provide for possible future contingencies has been given as an explanation of certain operations. For example, one accumulation of securities was explained by the federal reserve authorities on the basis that this was necessary in order to have "ammunition" on hand to curb inflation if gold imports continued. Again, a low rate was explained as necessary in order to serve as a sufficiently low basis for an increase.

5. Miscellaneous

One writer has suggested reasons for the expansion of credit which are, to say the least, realistic.¹⁴ He has suggested that credit is expanded because cheap money is always popular. This is apt to be the theory followed when political control is predominant. Again he offers, as a psychological reason for the expansion of credit, the fact that such expansion will offset caution and conservatism on the part of business men.

Finally, credit policy has been adapted to the condition of the banks of the country. At times the amount of member-bank indebtedness has been the guide, at others, bank failures. Assistance in "window-dressing" bank statements has also been a factor in central bank policy. This latter might be included in the money market factors as well.

6. Conclusions regarding Criteria

To develop a theory of central banking is beyond the scope of the present book. From what has been said thus far, however, it would seem that as a single guide to the need for expansion and contraction of central bank credit, a price index or a production index is too generalized. They are, however, of use in indicating a tendency. But after their movements have become so pronounced as to be reliable,

¹⁴ H. L. Reed, *op. cit.*, pp. 12-15.

much of the damage has already been done. On the other hand it is difficult to imagine a central bank management which would accept them as guides, when their movements were in the early stages. What central bank, for example, would begin a restrictive policy at a time when the wholesale price index had begun to rise after a period of depression, even though this recovery were as much as ten per cent?

Taken in combination, indexes of prices and production are still in too generalized a form; it is only after they have been broken down into indexes of prices and production in specific industries that they become valuable as guides which can be used with confidence. Even so, they must be read in the light of sales in the industries which they represent and of the reliance which is being placed on borrowing. The total quantity of credit becomes, then, an aggregate of the amounts which have been carefully extended to individual lines of production, and alterations in the total quantity become the result of expansion or contraction in individual industries.

Perhaps money market conditions are the best criteria for those central bank operations which are usually referred to as credit control. The equalization of the supply and demand for banking services during the seasonal expansion and contraction of trade may thus be brought about, and provision may thus be afforded for the necessary changes in the demand of the community for bank notes. The effects of temporary disturbances to the money market caused by quarterly fiscal transactions of the government may also be mitigated in this way.

In addition, the central bank, by virtue of its responsibility as the depository of the country's gold reserve, should give particular attention to international relations. It can assist in reducing the effects of the seasonal flow of trade on interest rates, exchange rates and gold movements, and in

encouraging the necessary alterations in trade and finance where serious changes in the economic position of the country are evident.

*The Instruments of Control*¹⁵

1. Interest Rates and Open Market Operations

We turn now to the instruments which have been indicated as enabling the central bank to alter the total volume of its liabilities. The rate of interest charged by the central bank was early looked upon as the obvious method of encouraging or discouraging borrowers. Much has been written about the theory of this method of control with particular reference to the Bank of England. Since American theory is predominantly influenced by the English tradition, much of this discussion has been taken over without, in most cases, making due allowance for the differences in the structure of banking in the two countries. The same is in general true of the writings which present explanations of the mechanism of the second instrument, namely, open market operations.

These two means of control are usually thought of as complementary; that is, an increase in the rate is regarded as being supplemented by the sale of securities or bills and vice versa, although the federal reserve banks have tried, on occasion, a policy of increasing the rate and selling securities. Caution must be used, however, in adapting the English analysis to American conditions, for these are not entirely the same. In the first place, England is a much smaller

¹⁵ For discussions of the instruments of control, see particularly the following: *The MacMillan Report*, p. 152, paragraph 356; Spahr, W. E., *The Federal Reserve Banks and Credit Control*, p. 35; Pigou, *Industrial Fluctuations*, pt. ii, ch. iv; Reed, *Federal Reserve Policy, 1921-1930*; Strong, *Interpretation of Federal Reserve Policy*, chs. x, xiii, xvi, xix; *Hearings on S. Res. 71*, United States Senate, pt. vi; Beckart, *Discount Policy of the Federal Reserve System*, chs. ii and iv, also pp. 351, 352; Willis and Steiner, *Federal Reserve Banking Practice*, p. 530; Burgess, *The Federal Reserve Banks and the Money Market*, pp. 203, 204.

country than the United States. Secondly, the London money market is predominantly a foreign exchange market, thus making gold movements more sensitive to banking conditions. Thirdly, London has a highly developed bill market by means of which the effects of changes in rates are brought more directly to bear on the ultimate borrower than they are in New York. In the fourth place, the structure of interest rates in London is different from that in New York, owing to the difference in the character of the markets. In the fifth place, the structure of English banking is entirely different from that in the United States, the highly developed system of branch banks in England being likely to cause a much more unified banking policy than in the United States. And lastly, the importance of the stock exchange in the United States is relatively greater than it is in the London money market. The significance of these differences will become evident in the next chapter.

2. Conserving Gold

A second group of methods at the command of the central bank, affecting the total volume of its credit available, has to do with changes in the character of its assets and liabilities. In the United States, for example, it has been suggested that in certain circumstances the federal reserve banks can increase their lending power by substituting federal reserve notes for gold certificates in circulation, thus leaving more gold free as a reserve for deposits. On the other hand, the reverse process may be used to show a lower reserve ratio, thus discouraging the banking community from expecting an increase in federal reserve credit.

Changing the character of central bank assets has also been given as a means of affecting the volume of credit. It has been suggested that if gold exports occur at a time when the central bank considers a reduction in the total volume of credit inadvisable, the central bank should sub-

stitute securities for the gold thus lost. Such an operation has obvious limitations. The reverse process has also been proposed. Another type of control through the shifting of assets is the substitution of securities for bills as the latter decline in volume, thus rendering the total volume of central bank credit constant. Vice versa, the central bank may think it advisable to sell some of its security portfolio as its bill holdings increase, thus preventing a too rapid increase in the volume of its credit.

3. Qualitative Instruments

All of the above instruments are purely quantitative controls. They assume that the sole function of the central bank is to adjust the total quantity of credit in accordance with the dictates of one or more criteria. Recently, however, there has crept into the literature of banking a suggestion of the qualitative character of control. The bank, it is believed, should pay more attention to the sources of application for its credit or, taking the opposite view of the matter, it should be more concerned with the uses to which its credit is being put. A hint of this is found in Hawtrey's writings. In discussing the means by which an individual bank can reduce the volume of its credit, he makes the following comment:

Short of an absolute refusal to lend, there is much that bankers can do to restrict credit. They can apply a more severe standard to the security offered; they can reduce the maximum period for which they are willing to lend; they can discriminate as to the purpose for which the borrower wants the loan. A banker knows much of the affairs of his customers, and can often practically veto hazardous or unnecessary enterprises, or can, at any rate, exercise much influence in advising caution.¹⁷

These ideas applied to central banking have taken the form

¹⁷ Hawtrey, *op. cit.*, pp. 23, 24.

of various suggestions looking toward qualitative control. Assuming that the chief instrument is the rate of interest, progressive rates have been suggested for less desirable paper. A more rigorous application of the same principle is found in the proposal to lay greater emphasis on the acceptability of different types of paper, all of which may be technically eligible for rediscount at the federal reserve banks.

A different approach to the problem places emphasis, not on the specific paper which is offered for re-discount, but on the general condition of the borrowing bank. All that Hawtrey says about the relationship of the bank to its customer would apply to the relationship between a federal reserve bank and a borrowing member. This would not, of course, be applicable to the Bank of England, for the joint-stock banks do not ordinarily borrow from the Bank of England.

Banking experience in the United States during 1929 and 1930 was probably responsible for some increase in the consideration given to the qualitative aspects of control. This policy was applied only in the broadest terms, however, namely, to the increase in credit due to loans on securities and loans to "business". It apparently seemed to the federal reserve authorities that there was nothing particularly wrong with business. Commodity prices had not risen, and there was no evidence of inventory speculation. On the other hand it was felt that "too much credit was going to the stock market". In this situation, quantitative considerations were pushed into the background, for a general restriction would fall on the just and unjust alike. Since no technique of qualitative control had been developed, floundering and unsatisfactory instruments of warnings and persuasion were resorted to in an attempt to control the volume of security loans without contracting "business" loans.

CHAPTER VI

EFFECTS OF CENTRAL BANK POLICY—CONTRACTION

Introduction

REGARDLESS of the theories upon which they are based most proposals for credit control culminate in a program of central bank policy which is wholly quantitative. It is assumed that the central bank must operate through alterations in its total volume of liabilities. Hence, aside from any theoretical relations or algebraic identities which may be said to exist between the total quantity of credit and prices, production, or gold, attention must be given to the effects of changes in central bank credit on the banking, business, and price structure of the community.

To assume, for example, that an increase in the rediscount rate or a sale of securities by the central bank will cause a decline in the level of prices is to overlook a long chain of reactions involving complicated questions of money market organization, banking systems (particularly the relations between the central banks and other banks) and the motives of business men. On the theoretical basis underlying the quantity theory, as outlined above, proper adjustment of the total volume of *central bank* credit will be reflected in appropriate changes in the price level. But central bank credit is not in the hands of the community to be spent for commodities so that the first necessity is to show the effects of central bank policy on the volume of member bank credit. The transition is usually made on the assumption that the volume of central bank credit affects the volume of member bank credit,

which in turn affects the volume of credit paid out by business to the public and thus prices are made to do what the central bank wishes. But when we attempt to trace the effects of a change in the central bank rediscount rate the case is not so clear.¹ In the following discussion we shall consider separately the effects of the contraction and expansion of central bank credit. In the present chapter our concern will be with contraction.

Importance of the Relation of the Central Bank to other Banks

The first difficulty with which we are faced is the place of the central bank in the banking system. What types of assets does it hold, who are its customers, what is its relation to the money market, and what is the significance of its interest rate or rates? For example, the federal reserve banks' assets consist mainly of government securities and advances to member banks. Its open market operations are carried out chiefly through the government securities market, since its

¹ "So complicated is this problem, the exact effect of the Bank Rate on prices, by the multiplicity of other factors that it is incapable of statistical solution." Beckhart, *op. cit.*, p. 454.

"A perusal of the statements of the Board leads one to conclude that they never were sure themselves of the exact effects of increases in the Bank rate." *Ibid.*, p. 462.

"We must not be satisfied, therefore, with any statement to the effect (e. g.) that an increase in bank rate will cause price levels to fall, unless it is explained to us at the same time by what intermediate action on the factors in the Fundamental Equation the fall is brought about." Keynes, *op. cit.*, vol. i, p. 185.

"Before, however, we embark on a detailed development of these ideas, it may be useful to outline the accepted doctrine as it has been developed historically and as it exists today. It is surprisingly difficult to do this. No systematic treatment of the subject exists in the English language, so far as I am aware. You will search in vain the works of Marshall, Pigou, Taussig or Irving Fisher. Even Professor Cassel's treatment, which is somewhat fuller, does not examine the train of causation in any detail." *Ibid.*, vol. i, p. 186.

dealings in acceptances are mostly by way of support of the acceptance market. The advances of the Bank of England on the other hand are insignificant and the effects of its operations are mainly on the acceptance market.² Owing to the relatively large proportion of foreign as compared with domestic financing in the London money market, the effects of the policy of the Bank of England will have a different incidence from that of the federal reserve banks in a money market where call loans for security operations are the predominant type of loan.

Again, there is a wide difference between the types of customers of the various central banks. In the United States the chief customers of the federal reserve banks are the member banks, while in England the joint-stock banks

² "The fundamental explanation of the different behaviour of the Federal Reserve System and the London System is to be found, therefore, firstly, in the ability of the Member Banks to re-discount direct with the Reserve Banks, and secondly, in the relative levels which prevail as a rule between call-money, first class bills and bank-rate." *Ibid.*, vol. ii, p. 238.

"For the British System has contrived, what is true of no other system, namely, that the volume of the 'advances' of the Bank of England (as defined above) shall be normally *nil* (subject to the qualifications mentioned below), and shall only come into existence *temporarily* and for short periods to meet seasonal and other emergencies, e. g. at balance-sheet dates at the end of each half-year, or when the money market has been taken by surprise, or to meet very temporary conditions, or when an increase of bank-rate is anticipated in the near future." *Ibid.*, p. 227 (italics his).

"If an English Joint-Stock Bank desires to replenish its reserve-resources, there are only three ways in which it can do so: (1) by selling assets to the customers of other banks and so getting hold of a part of the balances of some other bank, which clearly does nothing to relieve the banks as a whole; (2) by letting Treasury Bills run off and thus compelling the Treasury to borrow from the Bank of England on Ways and Means; (3) by depleting the resources of the bill-brokers either by withdrawing funds previously lent to them at call, or by ceasing to buy bills, and so compelling the bill-brokers to borrow from the Bank of England by discounting or otherwise." *Ibid.*, p. 228.

are rarely borrowers at the Bank of England. The Bank of France has a still wider clientele among the business houses and individuals of the country through approximately 300 branches. As a result of these differences in organization and customs, changes in the rate of re-discount at the central banks have different significances in different countries.

The truth is that . . . the bank rate is not the same thing as our Federal Reserve Rate. The Bank of England makes two rates, the bank rate itself, which is public, and the private rate, which, as the name implies, is not issued to the public but is varied by the Bank from time to time as it sees fit; so it may often be that in Great Britain, the actual rate of discount charged by the Bank of England is higher or lower than the public bank rate.³

In France it is again different, for when the bank rate is increased it becomes at once effective throughout the country to a wide clientele.

The technique of credit control, then, will vary from country to country. The differences in the power and authority of the central banks must be taken into consideration and they must determine their policy by the incidence of their actions. In what follows, we shall confine our discussion to conditions in the United States.

Effects on Member Banks

In discussing this question Mr. J. M. Keynes summarizes the theories he has found as follows:

The traditional doctrine, which has been developed in the ninety years which have since elapsed, has been woven of three distinct strands of thought. . . . The first of these regards Bank-rate merely as a means of regulating the *quantity* of bank-money The second strand is that which is generally uppermost in discussions by practical bankers. They regard Bank-rate policy primarily, not as a means of regulating the price level but as a

³ Willis and Steiner, *op. cit.*, p. 533.

means of protecting a country's gold-reserves by regulating the rate of foreign lending. . . . The third strand of thought is one which comes nearest to what seems to me to be the essence of the matter. It also winds through many previous discussions, but seldom or never in a clear or distinct fashion. This strand of thought conceives of Bank-rate as influencing in some way the rate of investment, or at least the rate of some kinds of investment, and, perhaps in the case of Wicksell and Cassel, as influencing the rate of investment relatively to that of savings.⁴

In somewhat similar terms, the MacMillan Report summarizes the functions of bank-rate:

1. Dear money tends to diminish the net amount which a country lends abroad or to increase the amount which it borrows. Both short-term lending and long-term lending are affected, though it is the former which feels a change soonest and most sensitively. Thus there is an immediate favourable effect on the country's balance of international payments and hence on its foreign exchanges and its gold reserves. This assumes that the change in the bank rate is a change relatively to rates elsewhere and is not merely keeping pace with changes elsewhere.

2. Dear money tends to curtail enterprise at home and the volume of purchasing power which is put into circulation. Some part of the purchasing power which is thus curtailed would have been spent on imports or on home-produced goods which are now released for export. Thus dear money has a favourable effect on a country's 'visible' balance of trade; which, again, has a favourable effect on the country's balance of international payments and hence on its foreign exchanges and on its gold reserves.

3. The curtailment of enterprise at home has the secondary effect (by its influence on demand relative to supply) of making it impossible for producers who are still continuing operations to sell their output at as high a price as before. Owing to the various difficulties in the way of closing down, especially if the

⁴ *A Treatise on Money*, vol. i, pp. 187-191 (italics his).

trouble is expected to be of short duration, and since even a reduced price will generally show some margin over prime cost, some producers will—for a time at least—accept a lower price for their products. This, again, will help the country's 'visible' balance of trade.

4. The fall of prices considered under (3) is a fall of prices which is not accompanied by a corresponding fall of costs and is, therefore, at the expense of the producer. If such a fall continues for any length of time it necessarily puts a pressure on producers to reduce costs, including wages if necessary. When costs as well as prices have fallen, the help to the country's 'visible' balance of trade resulting from the fall of prices will be on a more durable and reliable basis.⁵

That central bank policy affects the total quantity of purchasing power is basic in the quantitative approach to credit control. Even Keynes' third strand of thought ultimately comes to this.⁶ His peculiar contribution is not in demonstrating that central bank policy affects prices in some way

⁵ Pp. 95-96.

⁶ "That is to say, every effective alteration of bank-rate must be associated, except in so far as it is balanced by simultaneous alterations in other factors, by *some* alteration in the quantity of bank-money. But there is no simple or invariable relation between the effect of an alteration of bank rate on the price-level, whether of liquid consumption-goods or of output as a whole, and the associated alteration in the quantity of bank-money. The volume of bank-money must be in due relation to the volume of out-put, the rate of earnings, the rate of profit, the velocities of different classes of deposits and the requirement of the financial circulation. A change in bank-rate will have an effect, initially or subsequently, on all of these, and through them on price-levels. But its effect on these different factors will neither be in the same proportion on all of them at a given moment, nor in the same proportion on any of them at different stages of a transition; so that it is not useful to say that a change in bank rate changes price levels *because* it is associated with changes in the quantity of bank-money especially if this statement carries any suggestion that the price levels will change more or less in the same proportion as the change in the quantity of bank-money." *A Treatise on Money*, vol. i, pp. 216-217.

other than through the quantity of bank credit in the hands of the people, but in showing why this quantity changes. It will be our purpose in this section to follow central bank policy as it affects the quantity of bank credit domestically, leaving the international aspects for separate discussion.

Of first importance in the United States is the effect of central bank policy on the member banks. Since the federal reserve banks have no widespread system of branches dealing directly with the public, and since their dealings in acceptances are mainly by way of market support, whatever influence this policy is to have must be transmitted through the member banks.

The importance of interest rate changes affords the simplest explanation of the effects of central bank contraction. An increase in the central bank rate is supposed to cause the member banks to increase their rates to customers.⁷ This latter increase is then said to reduce the application by business men, for loans, which in turn reduces their demand for goods. Further, business then pays out less to workers who consequently have less to spend for commodities. The volume of purchasing power being thus reduced, prices fall.

Unfortunately so simple an explanation does not apply to conditions in the United States. The rates which the banks charge their regular customers are not thus easily regulated by the federal reserve bank.⁸ There are several reasons

⁷ "The main factor determining interest rates throughout the entire banking system in a country is the central bank's discount rate. . . ." Cassel, *op. cit.*, p. 103.

⁸ "Like Cassel, practically all the writers who urge the controlling power of the discount-rate urge it on the ground of a naive price theory in accordance with which a restriction in the demand for credit is effected whenever the price of credit, i. e. the interest rate, is raised and expansion takes place whenever the price is lowered." J. S. Lawrence, *Stabilization of Prices* (New York, 1926), p. 300.

⁹ "It seems doubtful, however, whether for a long time to come and taking the country as a whole, there will be any such close connection

for this. The chief reason is found in the banking habits of American business. Rather than being competitive, the majority of banking relations are on a line-of-credit basis.⁹ A business concern looks to a certain bank for all of its accommodations and comes to expect the same terms for that accommodation. Furthermore, the rate which a bank charges bears little relation to the rate charged by the federal reserve banks for rediscounts, for in most cases the customer rates are sufficiently above the rediscount rate so that $\frac{1}{2}$ or 1% changes in the central bank rate are unimportant.¹⁰

The second reason why an increase in the rate of rediscount charged by the federal reserve banks will not cause an

of Federal Reserve Bank rates with the volume of credit in use as was noted, for example, in pre-war days in England, the home of central banking." Beckhart, *Discount Policy of the Federal Reserve System*, p. 456 (quoting from the *Federal Reserve Bulletin*, 1919, p. 911).

⁹ "For example, the rate which is quoted by American banks is usually its prevailing line-of-credit rate to customers. This is a kind of rate which is relatively unknown in Great Britain or France and one which certainly does not furnish a satisfactory footing for comparison with the bank rates in those countries. In Great Britain the prevailing rate which is cited is that which is quoted for prime two-name paper. Such paper has a general marketability which our line-of-credit loans never can have. . . ." Willis and Steiner, *op. cit.*, p. 532.

¹⁰ "The ordinary rate for bank accommodation which is paid by the business man is the rate prevailing in the community usually as determined by an understanding of a general sort between banks and limited by the so-called usury laws which supposedly control the maximum charge which may be made to the borrower. Thus in many of the western states with a legal rate of 8 or even 10 per cent, and a rate prevailing at the Federal reserve bank of the district of not to exceed $4\frac{1}{2}$ per cent, the margin or gap between the two is so great that changes in the Federal reserve bank rate of limited amounts exert no influence upon the rates that may be charged by the bank to the customer. . . ." *Ibid.*, p. 516.

In reply to a questionnaire sent out by a Senate sub-committee, the federal reserve banks indicated that the rediscount rate has little effect on interest rates outside of the money market. *Hearings before Senate Sub-Committee on S. Res. 71, 71st Congress, Third Session*, part vi, p. 750.

equal rise, or in fact any rise at all, in the rates charged to customers of the member banks is arrived at by an analysis of bank costs. J. S. Lawrence, after making a careful analysis of bank costs in the United States presents a table in which he shows that if the banks of the country are charging an average rate of 5.6630 per cent. at a time when the rediscount rate is $4\frac{1}{2}$ per cent. they need raise their interest rates only to 10.5310 per cent should the reserve rate be raised to $94\frac{1}{2}$ per cent in order to make the same profit as before.¹¹

Reasoning from a hypothetical example, Keynes also comes to the conclusion that the central bank rate would have to be much higher than usual if it alone were to check member bank borrowing or cause them to raise their rates.¹²

It seems clear that we cannot rely upon a mechanistic explanation of the technique of credit control through the connection of interest rates and banking costs. In spite of this, however, the increase of the federal reserve rate apparently has a restrictive effect on banking operations. In a thorough review of the opinions of members of the federal reserve board and practical bankers, Beckhart shows that the general feeling is that a rise in the central bank rate does cause the banks to take up the work of credit restriction through closer scrutiny of applications, to determine the purposes for which the loans are desired, and leads them to take a more conservative attitude toward industrial expansion. None of the members however, suggests that this contraction is general. It is directed toward certain elements of the bank's business.

¹¹ "Our last and apparently least important item is the interest and discount on borrowed money. How an element which constitutes but 5.44 per cent of the cost of rendering a service can determine the price of that service is not in the class of self-evident truths." Lawrence, *op. cit.*, p. 309.

See also, Angell and Fieck, "The Expansion of Bank Credit", *Journal of Political Economy*, vol. xli, no. 2, April 1933, p. 190 *et seq.*

¹² *A Treatise on Money*, vol. ii, pp. 245-246.

Some refuse new customers, confining themselves to their already recognized borrowers. Some restrict the amount loaned to the stock market. One observer believes that the influence is more heavily felt in the commercial paper market.¹³

These results are more likely to be obtained if the central bank not only raises its rate, but likewise shows its desire for restriction through open market operations. By thus reducing the reserves of the member banks, further expansion on their part would require additional rediscounting. But why shouldn't they increase their borrowings at the federal reserve banks rather than engage in a policy of restriction, as we are told they do by the practical bankers as indicated above. Here we see that the whole technique of quantitative control rests on the tenuous basis of custom and psychological reactions. The central banker becomes sociologist and social psychologist. Burgess says, "The importance of a change in discount rate lies principally in its being a public recognition by a group of responsible and well-informed people of a change in the credit situation."¹⁴ Keynes also emphasizes these factors in his argument :

In the first place, pressure is put on the Member Banks to restrain their use of rediscounting facilities with the Federal Reserve Banks by criticising them, asking inconvenient questions, and creating a public opinion to the effect that it is not quite respectable for a Member Bank, or good for its credit, to be using the resources of the Reserve Bank more than its neighbors.¹⁵

And again :

Since 1925 the convention that Member Banks should not re-discount except for very short periods has been gaining ground, especially amongst the large New York banks.

¹³ Beckhart, *op. cit.*, pp. 435-471.

¹⁴ *The Reserve Banks and the Money Market*, p. 185.

¹⁵ *Op. cit.*, vol. ii, p. 240.

Whether this convention would stand the strain of a tussle between the Member Banks and the Reserve Banks with the latter trying to enforce a policy which the former resented, remains to be seen.¹⁶

Surely this is an insecure basis upon which to rest a proposal which is to have such far-reaching effects as are claimed for this type of credit control. What is even more serious, however, is that it is a clear demonstration that there is no theory of credit control involved. For, even granted that the rise in the central bank rate does encourage the member banks to follow a restrictive policy for reasons other than that their profits are affected, the problem of how the restriction is to come about is only stated, not answered. Shall the banks merely raise their rates to all borrowers, and let them compete for the loans? Or shall they grant some and refuse others? It is suggested that they scrutinize applications more closely. What shall be the basis of discrimination? If this policy is good at certain times, why isn't it good at all times? Should the banks laxly pass on any and all applications until there is "a public recognition by a group of responsible and well-informed people" that the banking system has fallen upon evil days? When shall this recognition be given; after the price index has risen one per cent, ten per cent, or some other predetermined amount? It is quite possible, even though the price index has not risen at all or may be actually declining, that an unstable debt structure has been built up.

The obvious answer is that the control of credit is a continuous process. It should be in operation every time an extension of credit is made. Only in this way will the development of unhealthy credit conditions be avoided. Credit is essentially qualitative, that is, some borrowers are entitled to extensions and some are not, and of those who are entitled to borrow, some should have more and some less. The analysis

¹⁶ *Ibid.*, vol. ii, p. 243.

and control of credit is likewise qualitative and continuous. The function of the central bank is thus not that of waiting until a generally bad credit condition has developed to give a signal to the community by a $\frac{1}{2}$ of one percent increase in its rate. Rather it should by constant vigilance do what is in its power to prevent the development of such situations. It can do this principally in two ways. First, by giving consideration to the condition of borrowing banks, it can warn them of the development of dangerous conditions in their portfolios, and enforce these warnings if necessary by restricting the accommodations provided.¹⁷ There is no reason to suppose that the credit conditions of all banks are any more uniform than those of all individuals or all corporations. In the second place the central bank can from its wider sources of knowledge supply the member banks with information regarding the conditions of individual industries. It can enforce these by use of the acceptability provisions in the federal reserve act in the rediscounting of paper. We have merely indicated the lines along which the control of credit must go, and will return to a fuller discussion in a later chapter. There are several additional aspects of the generalized quantitative approach which must first be investigated.

Effects on the Money Market

Although no direct relationship can be established between increases in the central bank rate and the rate which the customers are charged by their banks, it appears that, when the reserves of the member banks are impaired and the central bank gives evidence of desiring a restriction of credit, custom or psychology does cause the member banks to curtail their activities. While this curtailment may not affect all of its

¹⁷ "On the other hand, the excessive indebtedness of some member banks might be dealt with by subjecting their discount applications to special scrutiny." Reed, *Discount Policy of the Federal Reserve Banks, 1921-1930*, p. 12.

customers proportionately, there seems to be a fair degree of uniformity and evidence that it is effective in the money market.¹⁸ The importance of this is that, whatever the

¹⁸ *Cf.* for example:

"It has been explained to us in evidence that when the action of the Bank of England impels the joint stock banks to increase or decrease the volume of their assets (and hence of their deposits), the first effect of the change is likely to fall on the banks' more liquid assets, namely, their bills and their loans to the money market, and next on their investments; whilst, if they are forced to curtail their advances, they will first of all cut down advances of a financial or personal character and will be most reluctant to refuse advances to their customers for normal business purposes. Thus the effect of credit expansion or contraction on the amount of business advances will be mainly indirect." *MacMillan Report*, p. 99.

"... Far more responsive to Federal reserve rates than are rates on customers' paper, are rates for two classes of paper which represent investments for surplus funds of banks. Both rates on call loans and on commercial paper offered in the market through note brokers show a far wider range of fluctuation than do rates on customers' paper. . . . In the cities the call rate is probably more or less influenced by the Federal reserve rate and maintains a rough correspondence to it, especially at times when the lending power of member-banks is fairly well employed, because additional demands of the call market will then be supplied by borrowings effected at Federal reserve banks for the purpose of obtaining funds which may be used in call lending." Willis and Steiner, *op. cit.*, pp. 516-517.

"In every such country, various controlling factors operate in the money market, and are influenced in determining the rate there. Among such factors, the central bank rates, or rates of discount charged by the central banking organization or institution, always occupy a conspicuous place, and when the central banking mechanism is skilfully operated, the rates charged at central banking institutions have an important influence in determining the actual charge for money or funds in the open 'market'." *Ibid.*, p. 515.

"Following the rate increase of the Federal Reserve Bank call money renewed progressively at ten, twelve, fourteen and sixteen per cent, and on November 12, after a week of hesitation, prices broke violently." Beckhart, *Discount Policy of the Federal Reserve System*, p. 458 (quoting from the Report on Business Conditions, Second Federal Reserve District, November 20, 1919, p. 3).

"The advance in discount rates previously put into operation, however, is having an effect which is particularly noticeable in a few of the larger

effects of the central bank action are, they are likely to be confined to the money market. Care must therefore be exercised to avoid the assumption that these effects are felt by business men throughout the country, especially in a country as large as the United States, in which most of the financing of business is not through the money market but directly through the local banks. The restriction will be felt only by that group of borrowers who are able to finance themselves through the commercial paper market or by bankers' acceptances, and by those interested in the government securities market or the call loan market. Since the federal reserve banks purchase principally government securities, the markets for other bonds will be affected only in so far as the altered yields on the government bonds is reflected in the yields of the other bonds. How effective this will be will depend on the risks involved.

Although it may thus be true that the central bank policy is effective in increasing rates in the open market, the prob-

financial centers. At these points bankers have actively taken up the work of credit restriction and limitation. In some cases this restriction has extended to the point of declining to take on new business, the banks confining themselves to providing for the needs of their already recognized customers. In other cases important institutions, although not limiting the scope of their commercial activities, give evidence of endeavoring to curtail the amount advanced by them for stock market or investment operations. . . . The influence of the discount rate policy of the Federal Reserve Banks upon the investment market has if anything been less obvious than in the commercial banking field." Beckhart, *ibid.*, p. 459 (quoting from the *Federal Reserve Bulletin*, 1920, p. 345).

For charts of interest rates see:

Burgess, p. 192.

Lawrence, p. 285.

Beckhart, *op. cit.*, pp. 203, 280, 281, 324, 391, 392.

J. M. Chapman, *Fiscal Functions of the Federal Reserve Banks* (New York, 1923), p. 166.

W. W. Riefler, *Money Markets and Money Rates in the United States. Monthly Review of Credit Conditions*, Federal Reserve Bank of New York.

lem of the effect of the increase of these rates on the operations of the member banks still persists. Above, we found it necessary to reject the idea that the increase of the central bank rate directly influences the policy of the member banks through an increase of costs. This conclusion was based chiefly on the insensitiveness of the rates which are customarily charged to regular borrowers. Although in the case of money market rates, it is found that the central bank policy is effective, the same objections to the assumption that member banks are, thereby, automatically forced to restrict their loans hold, for "an increase in Market-rates far less than proportionate to the increase in the official rate will compensate the member bank for its loss in discounting bills with the Central Bank at a rate much above the market-rate at which it is buying them".¹⁰ This caution is necessary for the central bank policy can be made effective in the money market, at least in the government securities market, in the first instance. The sale of government securities, if carried out on a large enough scale, will of itself, cause their yield to go up. If this change of rate spreads to the other portions of the market, the banks will find themselves confronted with higher rates both on their loans and on their borrowings at the federal reserve bank. There is obviously no reason why they should not replenish by further borrowing, the reserves depleted by the central bank's sale of bonds. If other market rates do not follow the yield on government bonds there is still no reason, on a cost basis, why the banks should not increase their rediscounts. But given a condition where the central bank rate is above those prevailing in the market there are, in addition to those given above, two reasons why they should take such action. Keynes outlines them in the following passages: "Accordingly a bank which borrows from the Central Bank at a cost above the market-

¹⁰ Keynes, *Treatise on Money*, vol. ii, p. 247.

rate pays the whole cost of expanding credit, but reaps only a proportion, and perhaps only a small proportion of the benefit." "There is, however, a further consideration—and one likely, perhaps, to have more influence in practice than it should have on the basis of strict calculation—namely, the fact that, so long as market rates are below the official rate, it will always appear to a bank, which is desirous of increasing its reserve-balance, that it will pay it better to steal away the reserve-balances of other member banks than to borrow itself from the Reserve Bank".²⁰

Thus reduced to its lowest terms, the incidence of quantitative control is finally seen to fall on only a narrow section of banking and business. The reduction effected in the total volume of credit depends on the ability of the central bank to induce the member banks to follow its wishes through moral suasion, criticism, and pleading. If they do not do so the only result of the activities of the central bank is to shift its portfolio from government bonds to rediscounted paper.²¹

Furthermore, assuming that the central bank policy is effective, there is no assurance that the mounting volume of

²⁰ *Ibid.*, pp. 248-249.

²¹ Even such a strong advocate of this method of credit control as Mr. Keynes recognizes this flaw, for he says: "Many critics of that period (January to October, 1920) have ascribed the results to the failure of the Federal Reserve Banks to raise their discount rates on the approved London model. Certainly this failure aggravated the situation. But I doubt whether any reasonable or practicable movement of the discount rate could under the American system have really stopped the avalanche—market-rates would simply have moved ahead to an appropriate extent, and so long as prices were rising no one would mind paying them." *Treatise on Money*, vol. ii, p. 239.

In answer to the question of the effect of changes in the federal reserve rate, only three of the twelve banks felt that it caused a reduction in member bank borrowings. They added that in their opinion a reduction of the rediscount rate did not stimulate borrowing. *Hearings on S. Res. 71*, part vi, p. 750.

debts will be restricted in those fields where it should be restricted, that is, in connection with those debts which will not be repaid and whose non-payment will cause the ultimate downfall of the whole debt structure. As we have seen, the restriction will be felt primarily in the commercial paper market and the call loan market. But why should those corporations and industries which use the commercial paper market be singled out from all other businesses? Their business might be perfectly sound.²³ What chain of reasoning can explain the transfer of such restrictions to a Florida real estate boom, which is taking place on expanded bank credit, or to an oil boom in Oklahoma? Naturally, if one is primarily interested in the stability of a generalized index of prices, it makes no difference that some prices are reduced to offset increases in others. But the *adjustment* of prices, far from being realized, will be rendered still more remote. Such a program of credit control can be advocated only in the belief that the total volume of credit is of paramount importance, that somehow the general level of prices will be controlled through the variation of this total quantity of credit, and that the distribution of the debt structure between individuals and industries is of no importance.

Effects on Business

An important factor in the theory of quantitative credit control is the influence of the central bank policy on business

²³ Professor Spahr in his prize essay on the subject of credit control points out this difficulty in the following statement: "The use of the rediscount rate under such conditions may bring deplorable results. It penalizes eligible paper, innocent banks and borrowers and, in addition, probably causes a reaction in the market lasting but a few days in which much money is lost without any permanent or lasting good being accomplished either in the form of controlling recalcitrant member banks or in stabilizing credit conditions and prices in the stock market." W. E. Spahr, *The Federal Reserve System and the Control of Credit* (New York, 1931), p. 41.

men. "Business", used in a broad sense to include all economic activities engaged in for profit, is the link between the banks and the community. It is through the units of enterprise that bank credit reaches the individual. If, therefore, the community is to have a larger or smaller "unspent margin", to use Hawtrey's phrase, business men must be induced to borrow more or less, as the case may be. An important link in all theories, therefore, has been the effect of the central bank policy on business. The connection is usually made through interest rates. We have discussed at length the effect of an increase in the central bank rate on the rates paid by business. It is quite apparent that, at least under American conditions, in the majority of cases the increase in the central bank rate does not result in higher rates charged to business. Whatever influence it has, is apparently confined to those borrowers who make use of the money markets. If the restrictive policy is effective on other borrowers, it will be through direct curtailment of loans by the banks to their customers. But if the control is to be quantitative, we must put aside this direct curtailment, for this leads to a qualitative discussion of credit toward which we shall turn our attention in Part III. Thus the quantitative approach is limited to an analysis of the effects of higher interest rates in the restricted areas where they are found.

The first approach to an explanation of the relationship between increasing interest rates and the price level is by way of the classical marginal analysis. Increasing interest rates are said to cut off the marginal demands for credit, thus reducing the total volume of bank credit and finally reducing prices. It is to be borne in mind that these marginal borrowers must be confined to that section of the community which uses the open market, for they are the only ones who will feel the effects of the higher interest rates. Recognizing this limitation, the important factor in bringing about the con-

traction is costs. Just as in the case of the effects on the operations of the member banks supposed to be produced by the increase of the central bank rate, the whole success of the policy rests on the increased cost to borrowers of the rates of interest which they are called upon to pay as we hope to show, with as little warrant in this case as in the other.

Taking a broad view we can agree with the pertinent observation of Dr. Lawrence that

Keeping in mind the marginal principle of the cost theorists in accordance with which an increase in the "price" paid for money will reduce the demand for money by excluding marginal borrowers we may well ask ourselves if these marginal borrowers are likely to consist of those elements who provide the fever of speculation during the business cycle or whether they are more likely to be the stable elements whose influence is ever directed toward safety and the maintenance of the ship of business on an even keel? We are not likely to find many speculators working on fractional percentage margins. We are likely to find many conservative business men operating on fractional percentage margins. There is every probability, therefore, that a rise of several per cent in the interest rate will bar marginal borrowers who are precisely the ones whom we can least afford to exclude and will fail to a very large extent in affecting the particular elements whom the rise in the interest rate was intended to check.²⁸

That is to say it is a hit or miss policy. The principal result is apparently to decrease the total quantity of credit and to lower the prices of *some* things, anything apparently. There is no effort to curb borrowers who are too heavily in debt.

Attempting to define more narrowly the marginal borrowers, most theorists soon eliminated the manufacturing enterprises, as falling within the group. For a very cursory examination of manufacturing costs will reveal that the amount

²⁸ *Stabilisation of Prices*, pp. 320-321.

paid for interest forms an extremely small percentage of total costs. Thus the field of effectiveness is further narrowed. Mr. Hawtrey suggests on this point that while manufacturers may not be induced to curtail operations by the higher interest rates, those who are engaged in trading operations, such as wholesale dealers and traders, will do so.²⁴ This hypothesis is advanced on the basis that such dealers carry a large supply of working capital relatively to fixed capital and that they are, therefore, substantial borrowers on short term. The interest charges which they are called upon to pay are thus more important. But there is no more evidence to support this view than there is evidence that higher interest rates are effective in curtailing the manufacturer.²⁵

But a more serious consideration, which this approach overlooks, is the price relationships involved in the traders' business. The assumption is apparently that the prices at which goods are bought and at which they are sold are in perfect adjustment and that the profitableness of carrying on the business is determined by small changes in the costs, other than those for the stocks carried. But if prices are rising, and by hypothesis they are (otherwise there would be no need for the restrictive policy), the profit possibilities thus offered are likely to be of more importance than the increased cost of doing business, which results from higher interest rates.²⁶ Thus this line of reasoning reduces to the uncon-

²⁴ "We have already shown that a high rate of interest acts in the first instance on the wholesale dealer or merchant, who restricts his orders to the manufacturer or producer." Hawtrey, *op. cit.*, p. 111.

²⁵ "Mr. Hawtrey admits that these additional costs will be too small materially to affect the manufacturer, but assumes without investigation that they do materially affect the trader." Keynes, *op. cit.*, vol. i, p. 194.

²⁶ "He does not base his argument on the arousing of an expectation of falling price-levels in the minds of the dealers, and he makes the diminution of the supply of credit money the *last* event in his causal

vincing thesis that prices can be brought down by causing traders to borrow less. But they will not borrow less until they are faced with declining prices. We may be pardoned for thus speaking broadly of "prices" for the theory with which we are dealing itself considers "prices" as the equivalent of a price level, an objective entity without reference to the interrelationships between the prices included. Hawtrey himself weakens the theory by stating that, "it would seem, therefore, as if all the effects of a contraction of credit could only work slowly." And we might add that in that interim new maladjustments might occur. Further, "the moment foreign trade enters into the problem, all is changed."²⁷

Realizing that a case cannot be made on the basis of costs, many writers in an effort to explain why borrowers reduce the volume of their applications have turned to the psychological effects which the increased rates have on such borrowers.²⁸ However, while it is true that probably the most im-

train. Yet probably the question whether he is paying 5 per cent or 6 per cent for the accommodation he obtains from his banker influences the mind of the dealer very little more than it influences the mind of the manufacturer, as compared with the current and prospective rate of off-take for the goods he deals in and his expectations as to their prospective price movements." Keynes, *op. cit.*, vol. i, pp. 194-195 (italics his).

"It is not the mere facility of borrowing, or the difference between being able to discount at 3 or at 6 per cent that supplies the *motive* for purchasing, or even for selling. Few persons of the description here mentioned ever speculate but upon the confident expectation of an advance of price of at least 10 per cent. . . ." *Ibid.*, p. 196, quoting from Tooke. (Italics from the original.)

"But so long as the rate of interest is not deterrent—so long, that is, as it does not exceed the rate of profit likely to be made from the use of the sums borrowed—there is an inherent tendency on the part of traders to borrow more and more, and of bankers to lend more and more." Hawtrey, *Currency and Credit*, p. 30.

²⁷ *Ibid.*, p. 114.

²⁸ "There is a fourth factor by reference to which some writers (e. g. Professor Pigou) reinforce such other explanation as they may offer of

portant reason why business men curtail expansion is the expectation of lower prices, they need not wait for the central bank to give them a signal through a higher discount rate. If they will pay attention to the statistics of production and consumption and the accumulation of stocks of goods, they can tell for themselves whether or not they are borrowing too freely on the basis of prices which cannot be maintained. And here we are using "prices" as related to specific lines so that the contraction of debt and credit will be specific and will occur only where needed.

Effect on Bill Brokers

There is a type of borrower who must receive special mention in connection with the marginal doctrine applied to interest as a cost. This is the bill broker or commercial paper house. Operations of this sort are carried on on a very small profit margin with large volume of business. A small change in the rate of interest might, therefore, add enough to operating costs to induce curtailment. It should be noted that if the brokers are able to pass this on to the borrower, the problem of why the business borrower should be restrained by the additional interest charge remains as before. On the other hand, if the business represented by the paper in which these brokers deal is likewise carried on on a small margin as is likely to be the case in foreign exchange transactions, the higher rates do become effective in curtailing the demands for such credit. Also if the purchasers of such paper are not banks, in the sense of carrying checking ac-

the influence of bank-rate on the price-level, namely its psychological effect." Keynes, *op. cit.*, vol. i, p. 199 (*italics his*).

"The result of the higher Federal Reserve Bank rates, as far as we can learn, has been to impress borrowers with the necessity of borrowing as little as possible, and of presenting a sound case when applying for credit." Beckhart, *op. cit.*, p. 462 (quoting from *Monthly Review of the Federal Reserve Bank of New York*, June 20, 1920, par. 1).

counts, but firms investing their own funds, their willingness to buy at a time of rising interest rates will be lessened. The reason for this is that the cost analysis discussed in regard to banks does not apply, for in the case of the banks the multiple expansion of liabilities against borrowed reserves was the basic reason for the ineffectiveness of increased rediscount rates. Such multiple expansion does not apply to non-banking institutions.

The amount of business done through such bill-brokers is, however, not very large in the United States in proportion to the direct borrowing from banks.³⁹ Curtailment of their business cannot therefore, be relied upon as an important factor in the control of credit. In England, on the other hand, their role is more important and the policy of the Bank of England bears directly on them.⁴⁰ More important, however, is the fact of the importance of international transactions in the London market. The customers of the bill-brokers are, therefore, largely engaged in foreign exchange transactions and, in so far as the higher rates are passed on by the bill-brokers to their customers, the incidence of the restrictive policy falls on the latter. Thus it will be noted that the Bank of England policy is to a large extent not a quantitative control of credit but a qualitative one. It is the clearance of credit or the matching of obligations between banking systems which permits the trade of the world to be carried on without the use of gold. When gold begins to leave a country it is the signal that this clearance is not taking place and

³⁹ "The bulk of the requirements for credit facilities comes from industry and trade mainly domestic in its origin and character. Such a condition does not make for sensitiveness to the influence of changing rates such as was the case in England, where much business is done on a narrow margin of profit and where banking resources were normally employed largely in the international loan market." Beckhart, *op. cit.*, p. 456. (Quoting from *Federal Reserve Bulletin*, 1919, p. 911.)

⁴⁰ See for example Keynes, *Treatise on Money*, vol. ii, pp. 227-237.

that the relationship between the indebtedness of the country's banking system and that of other countries must be altered. Under conditions such as prevail in London, a restriction of credit by the central bank aimed to protect its gold reserve falls directly on the type of business which should be curtailed, without reliance on a long chain of events via banking costs, business costs, total volume of credit, and price levels.

Effect of Capital Values

There is another approach to the effects of changes in the central bank rate on business which does not depend for the desired results on "costs" as used above. It is indicated in the third strand of thought in Keynes's summary of the theory of the "modus operandi" of the bank rate. (see *Supra*, p. 170).

The simplest way of putting the point, as I conceive it, is to say that to raise the bank-rate discourages investment relatively to saving, and therefore lower prices, which by causing the receipts of entrepreneurs to fall below the normal, influence them to offer less employment all round; and this, sooner or later, brings down the rate of earnings in the same proportion as that in which prices have fallen; at which point a new position of equilibrium can be established. Now no writer, so far as I know, has clearly distinguished these two stages, i. e. the fall of prices and the fall of the costs of production, the initial fall of prices having been treated as if it were the end of the story. But how far previous writers have perceived that to discourage investment relatively to saving is *in itself* calculated to reduce prices is more difficult to say.²¹

²¹ *Ibid.*, vol. i, pp. 190-191 (italics his).

Cf. "By their energetic efforts at curtailing credits, and especially by their high discount rate, the Federal Reserve Banks have brought about an extensive, and sometimes precipitate realization of accumulated stocks, have severely cut down the demand for capital for all kinds of *new construction and improvements*, and have thus put a very effective check on

The basis for this position is found in an analysis of the conditions required for the stability of the price level. This is somewhat analogous to the attitude taken in Chapter IV above. Keynes's statement of the situation is as follows:

. . . if the output measured in cost of production is divided between consumption-goods and investment-goods in the same proportion as expenditure is divided between current consumption and savings, then the price-level of consumption-goods will be in equilibrium with their cost of production. But if the proportionate divisions are not the same in the two cases, then the price-level of consumption-goods will differ from their cost of production.²²

It is important in this connection to keep in mind that "when a man is deciding what proportion of his money-income to save, he is choosing between present consumption and the ownership of wealth."²³

An important difference between the view presented here and that expressed by Keynes must be noticed. Whereas he emphasizes the equilibrium between savings and investment, as a condition necessary to the stability of the price level, its broader significance lies in the maintenance of the even flow of production and consumption. Stability of the price level

enterprise. A policy of this kind always proves the surest means of bringing down the price level." Cassel, *op. cit.*, p. 226 (italics mine).

In interpreting Keynes's meaning, we must keep in mind his definitions of "saving" and "investment": "Saving is the act of the individual consumer and consists in the negative act of refraining from spending the whole of his current income on consumption. . . . Investment, on the other hand, is the act of the entrepreneur whose function it is to make the decisions which determine the amount of the non-available output, and consists in the positive act of starting or maintaining some process of production or of withholding liquid goods. It is measured by the net addition of wealth whether in the form of fixed capital, working capital or liquid capital." *Treatise on Money*, vol. I, p. 172.

²² Keynes, *op. cit.*, vol. I, p. 134.

²³ *Ibid.*, pp. 140-141.

becomes a secondary aspect of a more generalized stability. It might be argued that these are merely different aspects of the same thing. Yet there would seem to be a fundamental distinction. The view expressed here is that first concern should be given to the physical side of the question; if the aim of equilibrium is attained, then there is no cause for price disturbances. To give first attention to the price level is to invert the matter; for then the adjustment of the things produced to one another is overlooked. As has been constantly emphasized in the matter of credit restriction, generalized contraction following an increase of an average of prices, gives no assurance of contraction where it is needed. Even assuming that events take place as predicted, and that the reduction of the price level is effected, there is no assurance that the conditions in the realm of production are any more satisfactory than before. Under a stability of the price level in the sense of an average, there may still exist maladjustment which will lead to further difficulties. Covering over with paint a pillar infected with dry rot will not prevent a house from falling.

Equilibrium between savings and investment, then, is only a first approximation to a solution of the problem, a first division of factors. It is essential not only that the total of savings equal the total of investment, and that expenditures for consumption equal the cost of producing consumers' goods or that, in Keynes' terminology, the cost of production of consumers' goods be equal to the expenditures for consumption, but also that this shall hold true for specific products.⁸⁴ When the analysis is carried a step further, the obvious requirement is reached that the income and cost of

⁸⁴In the following passage in *Business Cycles, The Problem and its Setting* (New York, 1927), Professor Mitchell makes a similar observation: "To make the business economy function smoothly, it is necessary not only that the volume and velocity of the circulating medium shall respond to the changing pace of business, but also that coin, paper

production of each producer be equal. There are thus three stages in the development of the concept of equilibrium, progressively broader or narrower, depending on our starting point. Stability of the individual producing unit depends on the income (conversely, the amount expended by consumers) being equal to costs; stability for an industry (conceived as the sum of cooperating producing units engaged in the production of some one commodity) depends on the equality of the cost of production and the amount expended for consumption of that good; and finally, in the broadest phase, which considers the economic community as a whole, the amount spent for consumption must equal the amount earned in the production of consumers' goods. The converse of this is the Keynesian expression that savings must equal investment.

The usefulness of the concept of the equilibrium of savings and investment for credit and price-level control is that it provides a factor, namely, investment, through which control can be exercised.⁸⁵ Investment thus defined, is supposed to be controlled by the bank rate for: "It is the instrument by which a disturbance is set up or equilibrium restored between the rates of Saving and Investment: for to raise it stimulates the one and retards the other, and conversely if it is

money, and deposit currency shall keep flowing through the hands of business enterprises and individuals in exchange for goods. The flow, moreover, must be kept adjusted to the counterflow of goods offered for sale, *in detail as well as in gross*. If the dollar volume of any kind of goods flowing to market exceeds the flow of purchasing power which the prospective buyers are receiving and expending for that kind of goods, business troubles result—troubles that are trifling or grave as the quantities involved are small or large." p. 139 (*italics mine*).

⁸⁵ "This means, in substance, that the control of prices is exercised in the contemporary world *through the control of the rate of investment*. There is nothing that the central authority can do, whether it operates by means of the bank-rate or by means of open-market dealings, except to influence the rate of investment." Keynes, *op. cit.*, vol. ii, p. 211. (*Italics his.*)

reduced".³⁶ As in the case of other theories regarding the efficacy of changes in the bank-rate, it is here assumed that changes in the central bank rediscount rate are reflected in the rates which business pays and which savers receive. Passing over this question for the moment, it will be helpful to examine in more detail a fuller account of this particular "modus operandi." For the sake of exactness, rather long quotations from Mr. Keynes' Treatise may be pardoned.³⁷

³⁶ Keynes, *ibid.*, vol. i, p. 185.

³⁷ "Upon what does the demand-price of capital-goods depend? It depends on *two* things—on the estimated net prospective yield from fixed capital (estimated by the opinion of the market after such allowance as they choose to make for the uncertainty of anticipation, etc.), measured in money, and on the rate of interest at which this future yield is capitalized. It follows that the price of such goods can change for either of two reasons—because the prospective yield has changed or because the rate of interest has changed. And we can pursue the analysis a step further: since the prospective yield must be measured for the present purpose in terms of money, a change in it may be due either to a change in the real yield, its price remaining the same, or to a change in the prospective price (or money value) of the real yield.

Now a change in bank-rate is not calculated to have any effect (except, perhaps, remotely and of the second order of magnitude) on the prospective real yield of fixed capital. It may conceivably affect the prospective price of the real yield, but only, as a rule, on goods the future yield of which will be spread over a comparatively short period of time and if the change of bank-rate constitutes a new fact in itself—by throwing new light, for example, on the policy and intentions of the currency authority. This conceivable effect, however, is one which we will for the present neglect. The connection between bank-rate (and, more particularly bond-rate as affected by bank-rate) and the third influence on the price of capital goods, namely, the rate of interest at which the prospective money-yield of fixed capital is capitalized in order to arrive at its present money-value, is, on the other hand, immediate, direct, and obvious. The connection will not, indeed, be quantitatively important, except on goods of which the future yield will be spread over a very short period, unless the bond-yield is sensitive to changes in bank-rate. But this is, in fact, the case, and in a higher degree than might have been expected. If, for example, a rise of 1 per cent in bank-rate has the effect of raising bond-rate from 5 per cent to 5½ per cent, this means an average decrease of 2½ per cent in the price of new

Essentially his chief contribution to this phase of credit

fixed capital—the prices of some categories of such goods falling, of course, more than the average and those of others less, according to their length of life and other considerations. This must necessarily be deterrent to the production of such goods, until, as a result of it, the falling off in their prospective supply has raised the money-value of their prospective yield sufficiently to offset the effect of the higher rate of interest. . . . Moreover, the deterrent or attractive effect on the demand for new capital-goods is often greater than one might expect if one was to concentrate all one's attention on the mere change of (say) $2\frac{1}{2}$ to 5 per cent in the value of such goods due to the change in the rate of interest. For investment is much more capable of postponement or anticipation without serious disadvantage (or is so, at least, in the minds of those who make the decisions) than is consumption." Keynes, *ibid.*, pp. 202-203.

Another statement of the theory is as follows: "Thus, generally speaking, we may expect the direct and primary effects of a rise of bank-rate to be a fall in the price of fixed capital and, therefore, in P' , the price-level of investment goods and an increase of saving—of which the former is more likely to be quantitatively important than the latter.

"What are its *secondary* effects? The fall in the attractiveness of fixed capital at the existing price will make it impossible for producers of capital-goods to market their output on terms as satisfactory as before in relation to their cost of production and will be followed, therefore, by a fall in the output of such goods. At the same time, any increase of saving must mean a diminution in the flow of income directed towards the purchase of liquid consumption-goods and will be followed, therefore, by a fall of P' ." *Ibid.*, pp. 204-205.

And the tertiary effects which follow: "The decline in the rate of investment will cause a fall in P additional to any fall caused by the increase of savings, since there will be a reduction in the incomes of the producers of investment-goods available for the purchase of liquid consumption-goods as necessarily follows from the Fundamental Equation." *Ibid.*, p. 206.

And: "There is also one more aggravation. So long as there is a prospect of losses, the natural-rate of interest will fall below its normal level, thus widening the gap between the natural-rate and the market-rate, and requiring a reduction of the latter perhaps beyond what is practicable." *Ibid.*, p. 207.

And: "Finally, under the pressure of growing unemployment, the rate of earnings—though, perhaps, only at long last—will fall. This is the consummation of the whole process of pressure, if we can assume—as ordinarily we can—that the change in bank-rate had been dictated in the first instance by monetary reasons, local or international." *Ibid.*, p. 207.

control theory lies in a shift of emphasis from the effects of changes in the interest rates on business costs to their effects on the prices of capital goods. Thus changes in interest rates become directly effective in curtailing production, not through increased costs but in the reduction of selling prices of capital goods. If the rate of capitalization is increased, the values of investment goods become less, the prices offered for them become less, and the profits of the producers being reduced or eliminated, production is curtailed. Thus, since by hypothesis the increase in the price level was due to expenditures of consumers for consumption goods larger than the sum earned in their production, and since, therefore, these additional expenditures were the result of income earned from the production of investment goods, the decline in the production of investment goods will reduce incomes arising from this source, leaving less to be spent for consumption goods.

Mr. Keynes has done a real service to monetary theory in thus presenting the theory of prices. The most important aspect is the shifting of emphasis from studies of the total quantity of bank credit, production indexes, and averages of widely diverse groups of prices, to the distribution of income and expenditure. That is, he indicates in a broad way that it does make some difference how incomes are employed and what is produced. Furthermore, by basing his theory on an index of the prices of consumption goods he focuses attention on the field of consumption, thus indicating that other prices (such as those at wholesale prices and those of capital goods) are derivatives. (Unfortunately, he abandons the consumption index in the second volume and reverts to the wholesale index).²⁸ We infer, that is, that production in and of itself is insignificant unless it results in consumption at prices which enable the producers to cover their costs. He has given us the first broad categories which need investigation, namely,

²⁸ E. g., vol. ii, p. 391.

the distribution of income between saving and consumption and the distribution of production between capital goods and consumption goods. He does not, as pointed out above, indicate the necessity of further subdividing the flow of the expenditures for consumption into specific lines of goods to see if they match up with what is being produced. Neither does he indicate the necessity of subdividing the production of investment goods into categories to see if they fit in with the production and consumption of consumable goods.

The other important difference in his theory, and that which is really of chief concern in this chapter, is in his reliance on capitalized incomes rather than on costs for the effectiveness of changes in the bank rate. Changes in the rate thus alter prices directly, at least in the field of investment goods. Changes in the prices of consumption goods still depend on alterations in the quantity of money paid out to the community. But the reasons he gives why producers should borrow less and produce less are at least more convincing than the cost theories.

But, granted all this, two objections made to the previous theories apply with equal force to this one. He makes no progress in answering the question, "Are changes in the rate of discount charged by the central bank in fact made effective to business men and savers?" The other objection originates in the fact that the capitalized values of investment goods depend quite as much on the earnings of these goods as on the rate of capitalization. What is more important, they depend on the *estimated* earnings, or more specifically on the expected prices. If these expectations are too optimistic, over-expansion will take place even though the rate of interest increase. It is only necessary that expectations rise faster than the rate of interest, and there is no limit to the expectations of a really optimistic sales-manager or advertising agent.

One has the feeling that Mr. Keynes rather evades the first of these questions. Although he recognizes that "we must not be satisfied, therefore, with any statement to the effect (e. g.) that an increase in bank-rate will cause price-levels to fall, unless it is explained to us at the same time by what intermediate action on the factors in the Fundamental Equation the fall is brought about,"³⁹ he omits the connection between the bank rate and effective market rates. In explaining his technique of control he lays down the following conditions:

It is convenient to mean by "Bank-rate" in this section of this chapter the *effective* rate for lending and borrowing which prevails in the market, i. e. not necessarily the official published rate of the Central Bank at which it will discount three months' bills of a specified type, but the complex of interest rates effective in the market at any time for the borrowing and lending of money for short periods;⁴⁰

and

It will also be convenient to use the term "bond-rate" to designate the complex of interest rates effective in the market for the borrowing and lending of money for longer periods; and we shall use the term "market-rate of interest" for the complex of bank-rate and bond-rate . . . *We shall here assume that changes in bank-rate affect the market-rate of interest in the same direction.*⁴¹

³⁹ *Op. cit.*, vol. i, p. 185.

⁴⁰ *Ibid.*, vol. i, p. 200 (italics his).

⁴¹ *Ibid.*, p. 201 (italics mine).

The last sentence seems confusing. Obviously, if "market-rate of interest" means a "complex" of the other two rates, then if one of them increases, the "complex" must also increase. The interpretation of "complex" here is analogous to "average". If this interpretation is correct, the "market-rate" might well go up as a result of an increase in "bank-rate" without indicating that "bond-rate" had followed. It is, of course, essential to the theory that "bond-rate" move sympathetically with "bank-rate". If Mr. Keynes assumes that it does, the passage would have been clearer had he said so explicitly.

Now according to Mr. Keynes, the sole instrument by which the central bank policy is to be made effective is its discount rate.⁴² It becomes of paramount importance, then, to prove that changes in this rate will affect the other factors, and in the case of the particular theory under review, that it will affect the rates of interest effective in the investment market.⁴³ Of the relation of the central bank rate to market rates he merely says, "The main, direct influence of the Banking System is over the short-term rate of interest."⁴⁴ We have already discussed this relationship in a previous section and need add nothing here. Certainly for the United States, no historical proof can be offered that the market

⁴² "Thus—in spite of the qualifications which we shall have to introduce later in respect of the so-called 'open-market' operations of Central Banks—it is broadly true to say that the governor of the whole system is the rate of discount. For this is the only factor which is directly subject to the will and fiat of the central authority, so that it is from this that induced changes in all other factors must flow." *Ibid.*, vol. ii, p. 211 (italics his).

The wish fulfilment here should be noted. It is one thing to say that the rate of discount is "the only factor which is directly subject to the will and fiat of the central authority", and quite another to say that "it is the governor of the whole system".

⁴³ Mr. Keynes eliminates the effects on working and liquid capital in the following passages: "I do not believe, however—for reasons already given in Book VI—that the volume of investment either in working capital or in liquid capital is sensitive to changes in the short-term rate of interest by itself and unless these changes create an expectation of changes in prices." *Ibid.*, vol. ii, p. 339.

He further eliminates the effects on investment in manufacturing plants, for "willingness to invest more or less in manufacturing plants is not likely to be very sensitive to small changes in bond-rate. But the quantity of new fixed capital required by industry is relatively trifling even at the best times, and is not a big factor in the situation. Almost the whole of the fixed capital of the world is represented by buildings, transport and public utilities; and the sensitiveness of these activities even to small changes in the long-term rate of interest, though with an appreciable time-lag, is surely considerable." *Ibid.*, p. 364.

⁴⁴ *Ibid.*, p. 352.

follows the central bank rate, for, except for a short period after the opening of the federal reserve banks, the relationship has been exactly reversed.

In discussing the second stage in the chain of events, namely, the affect of short term on long term rates, Mr. Keynes presents a chart from Riefler which shows that the average yield on sixty high-grade bonds had an increase and a decrease sympathetic with short term rates in the period 1919-21, and an increase in 1922-23.⁴⁵ Beginning in 1923 the short term rates declined sharply until the late summer of 1924 after which they had a slight general upward tendency until early 1928 when they moved up sharply. The bond yields, on the other hand, started downward in late 1923 and continued this movement until early 1928, when they again showed a tendency to follow the short term rates. For England he relies on the yields of Consols to bring out the similarity of movement between short term rates and bond yields.

But, granting that the chain of events is thoroughly proven by this meagre evidence, the case is far from convincing. For business is not financed by Consols or even by high grade bonds. It is financed by second and third grade bonds, preferred and common stocks. It is all very well to speak broadly in terms of complexes of short-term rates and complexes of long-term rates, and complexes of these complexes, but the fact remains that business men do not deal in complexes, they deal in specific rates. The farther we get from Consols, the more important become earnings and anticipated earnings, prices and anticipated prices in the determination of capital values. Even if it could be shown that the rates on other types of securities followed those on Consols and high grade bonds, there is still no reason why this increase of

⁴⁵ W. W. Riefler, *Money Rates and Money Markets in the United States* (New York, 1930).

interest rates should curtail expansion of production and the volume of credit. In the last analysis, this theory of control comes down to the method to which we have been objecting all through, namely, offsetting expansion in some lines by contraction in others. The ill effects which follow inability to control industrial expansion are to be offset by penalizing the government, public utilities, and building construction with higher rates.⁴⁶ The soundness of the credit structure as measured by the banking assets upon which it is built is not brought into view. The elimination from bank portfolios of those loans which are likely to lead to a breakdown of clearance and of the debt-credit system is not discussed. All that seems to be important is that someone reduce the amount of investment.

Even Mr. Keynes is not thoroughly convinced that his proposed system will work, for in answering the question, "can the Banking System control the rate of investment?", he says,

We have not, as yet, made more than a very little progress towards answering this question in the affirmative. We have shown that the long-term market-rate of interest can be influenced to a certain extent in the desired direction by movements of the short-term rate. But even if the market-rate changes a little, the natural rate may be changing much faster. For one conclusion to hold, it is necessary, therefore, that we should raise a presumption of an ability on the part of the Banking system to cause the market-rate of interest to move as much and as quickly as the natural-rate is likely to move in ordinary circumstances.

We shall not be able to prove this by an appeal to statistics. For the mere occurrence of a Credit Cycle is in itself a demonstration of the fact that the Banking System has failed to change the market-rate so as to keep pace with changes in the

⁴⁶ While Mr. Keynes recognizes this fact he does not give it proper weight. See, e. g., his quotation from Tooke, *op. cit.*, vol. i, pp. 195-196.

natural-rate. It is certain, therefore, that hitherto the Banking System has not succeeded in controlling the Rate of Investment with sufficient success to avoid serious instability.

Thus we cannot do more at present than marshal the various means at the disposal of the Banking System. Only the future can show for certain whether the conscious and well-directed use of all these means, confidently employed in the right degree and at the right time, is capable of solving the problem.⁴⁷

And again, "I have more sympathy today than I had a few years ago with some of the doubts and hesitations such as were expressed in 1927 by Governor Strong and other witnesses before the Committee of the United States Congress on Stabilization".⁴⁸

Once the limitations of the ability of the central bank rate to control the rates at which industry actually borrows, and the possibility that optimistic estimates may nullify such limited effects, are realized the capitalization theory, like the cost theory, breaks down and resort must be had to more qualitative explanations.⁴⁹ Whatever contraction is brought about rests with the member banks. They must be willing to cooperate with the central bank policy, and "its weapons for securing this co-operation are terror, agreement, and convention"⁵⁰ not increases in the rediscount rate.

Summary

Regardless of algebraic identities which may be established between the volume of goods, the quantity of credit, and the

⁴⁷ *Ibid.*, vol. ii, pp. 362-363 (italics mine).

⁴⁸ *Ibid.*, p. 340.

⁴⁹ It has been suggested by Mr. Keynes and others that contraction might be effected through influencing the issue houses. Declining bond prices make their operations more difficult. This, however, is not a new factor for the result depends on the interest rate forcing down the prices of securities in the face of optimistic estimates. See *Treatise on Money*, vol. ii, pp. 367-368, and Hawtrey, *Currency and Credit*, p. 26.

⁵⁰ See Keynes, *op. cit.*, vol. ii, p. 366.

level of prices, the explanations of the reduction of the level of prices and the establishment of industrial equilibrium through a reduction of the total quantity of central bank credit as such are far from convincing. Many critical links in the chain connecting central bank policy with changes in the level of prices are woefully weak. This is particularly true of the attempt to relate reduced borrowings by business to increases in rates of interest. In order to make the case at all tenable, resort must be had to qualitative restriction and the work of economists has been exceptionally deficient in providing criteria by which this can be done.

We turn now to the other side of the question, namely, raising prices by increasing the volume of bank credit.

CHAPTER VII

EFFECTS OF CENTRAL BANK POLICY—EXPANSION

Introduction

THE usual method followed in expounding the theory of credit control is to discuss increases and decreases of prices as converse phenomena. This is a result of the mathematical approach and the quantity theory. The banking system is regarded as an engine for providing credit and it is believed that it can be run either forward or in reverse. Banking is looked upon as bearing an Euclidian parallelism to business, as does credit to goods, and the art of banking consists in observing the external phenomena of production or prices to determine the speed and direction in which the engine is to be run. In this theory there is no suggestion of the interrelationship of credit and production and no recognition of the fact that the volume of credit should be determined quite as much by the *kinds* of production as by the volume. And most important of all, the fact that credit is but another name for debt is overlooked. Further, the banking system is assumed to have absolute autonomy in providing as much or as little credit as it sees fit.¹ Many authors, in their discussions of credit control create the im-

¹ See, for example, D. H. Robertson, *Banking Policy and the Price Level* (London, 1926), pp. 53-56.

Cf., "For the world as a whole the best hope of a remedy lies in a monetary policy designed to increase the volume of purchasing power, to increase the ease of borrowing if necessary by guarantees, to diminish the rate of interest, long-term as well as short-term, and to stimulate in every possible way the spirit of enterprise and the volume of investment," *The MacMillan Report*, p. 190, par. 2, Addendum I. All of this the banking system is supposed to do. It should increase the volume of purchasing

pression that they are talking of *fiat money*; that they consider that the banks assume no liability in increasing the volume of credit. This view of credit seems to be a result of reasoning from a commodity money through representative money to bank money, as does Keynes for example, rather than approaching credit through the study of the credit system which makes possible the indirect exchange of goods *without the use of money*, provided there is a money of account.²

Declining Prices not the Converse of Rising Prices

Declining prices are thus to be arrested by putting into the hands of the people more credit, more "purchasing power". One of the first qualifications, however, which has been made to the rigorous quantitative relationship between credit and prices, is that the people not only have deposits but must also be spending them. This has sometimes been discussed as the velocity of circulation of credit, although it is really not so much a matter of velocity as of willingness to consume. But this variable also has been assumed to be under the control of the banking system and more specifically of the central bank.³ But, obviously, this gen-

power, increase the ease of borrowing—this latter by guarantees—but by whom? It should diminish the long term rate of interest as well as the short term, but what has become of the theory of interest? In addition, it is merely asked that the banks stimulate enterprise and the volume of investment.

"If credit is extended too freely, if it exceeds in amount the goods and services offered for it at that price level, then inflation takes place and a rise in prices ensues. If credit is not extended rapidly enough there is a tendency for prices to fall. The problem in credit control is to regulate its supply so that it will keep step accurately with changes in the amount of commodities and services offered for it and thereby stabilize the price level." Spahr, *op. cit.*, p. 16.

² See chs. i, ii, iii of the *Treatise*.

³ *Cf.*, for example,

"A superficial interpretation of the quantity theory would lead us to

eralized view is inadequate. In which lines of goods is the decline in consumption the greatest? Why have people ceased to spend as freely as before? What are they doing with the unspent income? This latter question is usually dealt with more fully than the others. Keynes, in particular, follows the train of events in more detail than others and in fact bases his theory of control on it.

But it is our feeling that a decline in prices cannot be treated as the converse of a rise. Several writers have indicated this but have not discussed fully the implications.⁴

The Difference between Credit and Inconvertible Money

The essential difficulty in dealing with a decline is that banks do not deal in inconvertible credit. The expansion of

lay all the stress on balances, and to say that prices ought to increase in proportion to the unspent margin, i. e. to the quantity of credit and money in the hands of the people. But now we see that the more *slowly* this quantity increases, the greater will be the rise of prices, so long as the acceleration of the creation of credit continues." Hawtrey, *Currency and Credit*, p. 43 (italics his).

"A tendency of *k'* to increase may be somewhat counteracted by lowering the bank-rate, because easy lending diminishes the advantage of keeping a margin for contingencies in cash. Cheap money also operates to counterbalance an increase of *k'*, because, by encouraging borrowing from the banks, it prevents *r* from increasing or causes *r* to diminish." Keynes, *Monetary Reform*, p. 93.

Also, see the passages in Robertson referred to in footnote 1.

⁴ Cf., for example,

"It behooves, however, even an advocate of moderate stability of the price-level to admit that it is likely to prove harder for the banking-system to check an uneconomic fall in prices than to restrain an uneconomic rise. For first, while there is always *some* rate of money interest which will check an eager borrower, there may be *no* rate of money interest in excess of zero which will stimulate an unwilling one. Secondly, a policy of direct limitation of bank-loans has no counterpart in periods of falling prices: the assumption . . . that the total magnitude of the money supply lies entirely within the discretion of the banking-system, and not at all within that of the public, seems to have only a limited validity for such periods." Robertson, *op. cit.*, p. 81 (italics his).

credit necessarily implies the expansion of debt. By increasing the volume of their liabilities, the banks subject themselves to demands for cash. Further, in order to get the bank credit into the hands of the public, someone must borrow from the banks, since no technique has been devised for placing bank credit directly at the disposal of the community without a reciprocal claim being established. Thus an important part of every theory is an explanation of why borrowing at banks should increase. By reducing the central bank rediscount rate and following an open market policy designed to make this rate effective, the stage is set for the increased borrowing to take place. As in the case of a restriction, however, the question must be faced as to what the effect of the central bank policy will be on the member banks and on business. There is in the case of controlling a decline, the additional difficulty mentioned by Robertson (see footnote 4 in this chapter). In the case of a restriction of credit, while it was found that there were no mandatory reasons why the member banks should follow the lead of the central bank, they might by tradition, custom, persuasion, or threat be induced to contract their operations. By being more conservative in their loan policies they could, through refusals, reduce the volume of borrowing. This process has no counterpart when the central bank attempts to expand credit. More serious, however, is the fact that just at the time when an expansion policy is desirable from the point of view of stopping a decline in the price level, many banks are having a difficult time maintaining solvency. Along with the declining prices and business failures are banking failures. Rather than attempting to expand their liabilities, the banks are finding difficulty in meeting those they have already incurred. With the breakdown in trade which characterizes the end of the expansion period, comes a breakdown in the clearings of banks, and hence a scramble

for reserves. Herein lies a fundamental fallacy in the theory of credit control, for the decline in prices is supposed to be due to a lack of "money" although in the period of high or rising prices just preceding the decline, the volume of bank deposits is at a high point. It is in meeting these liabilities that the banking difficulties originate, so that in the face of a breakdown in clearings, further expansion of liabilities is well nigh impossible.

Position of the Banks in a Depression

But supposing that the central bank can make its policy effective in engendering in the member banks a greater willingness to lend, there is the further difficulty of finding borrowers for, as pointed out above, there is little opportunity for the banks to increase the amount borrowed. They can only register their willingness in lower interest rates and more lax credit requirements. The latter policy might lead them to make loans to what Keynes calls "the fringe of unsatisfied borrowers".⁵ This, however, is dangerous for it may breed later troubles. It is asking too much of a bank to take on questionable loans for the social purpose of getting more purchasing power into the hands of the people, so that somewhere something will be bought and prices rise.⁶

⁵ "There is, that is to say, in Great Britain an habitual system of rationing in the attitude of banks to borrowers—the amount lent to any individual being governed not solely by the security and the rate of interest offered, but also by reference to the borrower's purposes and his standing with the bank as a valuable or influential client. Thus there is normally a fringe of unsatisfied borrowers who are not considered to have the first claims on a bank's favors, but to whom the bank would be quite ready to lend if it were to find itself in a position to lend more." Keynes, *Treatise on Money*, vol. ii, p. 365.

⁶ Compare the attitude expressed in the following:

"It is argued, for example, at a time of depression, that industry cannot be tempted into activity by the offer of bank advances, or that, if it could, that would merely mean that industrialists were borrowing more than was desirable or prudent. . . . Such arguments are based on

If the community does not buy an increased amount of the borrower's products he will be unable to repay the bank, but the bank must meet the increased liabilities resulting from his borrowing. Thus the banks may individually be called on to pay the cost of the social gain and, if a borrower is a poor risk in a time of optimism and expanding business, how much more unsatisfactory would his application become during a period of falling sales and declining prices.

Effects on Business

There is left, then, the effect of the lower interest rates in inducing business to borrow. At the outset, the limited area to which these reduced rates apply, as discussed in the control of expansion, must be borne in mind. But in this limited area it is yet to be explained to us why borrowers should come forward. That they do not has been often noted by previous writers.⁷ And there is good reason why they do not. In many cases, they are finding difficulty in repaying what they have already borrowed; and if they have no debts, they likewise have no sales and there is no necessity for borrowing.

a misconception. When banks increase their advances they *create money*, whoever the borrowers may be, and whatever their purpose. People do not borrow money to hold it idle, and therefore the borrowing is always the precursor of a release of cash and an enlargement of the consumers' income. . . . It may be freely admitted that it is highly detrimental that banks should lend to unsound borrowers or for undesirable purposes. But if they do, they create money and generate incomes and augment demand no less than if their lending were of impeccable prudence." Hawtrey, *The Art of Central Banking* (New York, 1932), pp. 290-1 (italics mine).

⁷ "Today, however, the main trouble is not a limitation of the amount of available bank credit, but the reluctance of acceptable borrowers to come forward." *MacMillan Report*, Addendum i, par. 6, p. 191.

"Despite the frequency of the rate reductions of 1921, the total volume of reserve credit had continued to decline." Reed, *Federal Reserve Policy*, p. 10.

The theoretical explanations of how the reduced interest rates stimulate an expansion of credit are the converse of those given to explain a contraction, namely, the effect on costs, and the effect on investment, with a few incidental effects applying to dealers in securities or other financial operations.⁸ And what was said of these theories in reference to their effectiveness in controlling expansion applies with equal force to their effectiveness in controlling a decline. The cost theory is wholly inadequate for even the most ardent advocates of the expansion of credit as a cure for depression have pointed out its deficiencies.⁹

The capitalization theory is also as inadequate in the explanation of how a depression is to be cured as it is in the explanation of how an expansion can be halted. In some respects it is even weaker in a depression than in a period of expansion. It depends on the decline in the interest rate automatically increasing the values of capital goods. But if the yield is zero or a minus quantity it is difficult to see how a decline in the denominator of the capitalization formula can increase the value of the fraction. That is to say, the income from the capital, as determined by the

⁸ "It is not unusual for the stimulus to new investment to come about through a lower bank-rate first of all affecting the financial, as distinguished from the industrial, situation and so sending up the price-level of *existing* investments (including the price-level of working-capital, i. e. the wholesale standard)." Keynes, *op. cit.*, vol. i, p. 211 (italics his).

⁹ "For—other things being equal—an all-round reduction of the cost of production should not stimulate any one to increase his output, inasmuch as the aggregate incomes of consumers, which are simply the aggregate costs of production under another name, available to purchase the output, are also being reduced to exactly the same extent." Keynes, *op. cit.*, vol. i, p. 211.

"When conditions of extreme uncertainty and depression have developed, a mere change in the cost of short-term credit will not be sufficient by itself to attract borrowers for purposes of new enterprise who on other grounds are reluctant." *MacMillan Report*, p. 103.

anticipation of prices and sales, is of more importance than the rate of capitalization.¹⁹

But there is a more serious error in this theory than the mechanistic one given above. It lies, it seems to us, in an incorrect interpretation by Keynes of his own premise, which is that the decline in the level of prices is due to a disequilibrium between savings and investment. With this we have said that in general we agree. His interpretation seems to be that when prices decline, savings are running ahead of investment and that the decline can be halted by stimulating investment. Now the actual situation seems to be that while prices are rising investment runs ahead of savings, the additional "funds" being obtained through an expansion of bank credit and not through a decline in consumption, as his premises or fundamental equations indicate. While the investment is taking place, incomes are larger than the value of the goods offered for consumption. More can therefore be paid for consumption goods, and more can be "saved" or used to purchase securities. The prices of consumption goods and securities can thus rise simultaneously and cumulatively. More funds are likely to be tempted into securities, for the prices of goods are rising, thus increasing the profit possibilities; moreover the rise in security prices attracts speculators. This increased flow of funds into the investment market provides larger funds for business to invest in capital goods. When the increased volume of consumption goods, resulting from the increased investment, comes upon the market, it is found that expenditures for consump-

¹⁹ In realization of this, Keynes has a tendency to use the psychological theory to bolster his case by assuming that the central bank policy engenders favorable estimates in the minds of entrepreneurs. Cf., e. g., "Certain entrepreneurs may now be willing to increase their output even if this means making higher offers than before to the factors of production because (as the ultimate result of the influx of new money) they foresee profits." Keynes, *op. cit.*, vol. 1, p. 264.

tion are inadequate to take them off. This is to be expected, for the incomes earned in the production of the capital goods have been locked up in the purchase of securities and absorbed in the higher prices which have prevailed for consumption goods. In order to dispose of the larger quantity of consumable goods, prices must be reduced. Now when prices begin to decline, the Keynesian theory expects the decline to be stopped by the additional expenditure for capital goods. That is, too much investment causes prices to increase and when they turn in the other direction, more investment is required. But when a depression has set in, the volume of idle plant capacity is in itself enough to discourage the expectation of much assistance from further investment.

The theory is logical enough if we consider price increases and decreases independently, or merely as converses of a mathematical proposition. But when they are viewed as interrelated, an increase laying the foundation for a decrease and a decrease laying the foundation for an increase, a boom engendering a slump and a slump engendering a boom, we see the hopelessness of expecting the cause of the boom to be the cure of the slump. In a condition where business is finding difficulty in selling to the community what it has produced, just how the production of more goods is to cure the situation is not entirely clear. The error seems to lie in starting each part of the analysis from equilibrium. That is, with the price level neither increasing nor decreasing, it seems logical, in accordance with Mr. Keynes' premises, that an excess of saving over investment will cause retail prices to decline. And a stimulation of investment will reverse their direction.¹¹ Conversely, if prices are stable, an excess

¹¹ But even this is incomplete, for what is to happen to the price level when the new consumption goods come onto the market as a result of the additional investment?

of investment over savings will cause them to increase. But when prices have risen as a result of the expansion of investment on the basis of expanded bank credit, and when the larger incomes thus paid out have become frozen in the ownership of securities and absorbed in higher prices for consumers' goods, the case for more investment as a corrective of the resulting price decline is unconvincing.

But if we follow Keynes closely, this whole line of reasoning is beside the point. As remarked earlier (footnote 43, ch. vi) he eliminates from consideration investment in liquid capital, working capital, and fixed capital for manufacturing. The burden is thus thrown on transportation, public utilities, building construction, and governments.¹²

¹²Dr. Wagemann lays greatest emphasis on residence construction. Cf. the following:

"It is highly significant that the building trade—not, as many representatives of the theoretical school imagine, the industrial, but the house-building trade—is very active during a depression, although during a revival it may even suffer a decline. This is no doubt, to be viewed in connection with the fact that the building industry's final product—the use of dwelling accommodation—is paid for by house rent, which is a fairly constant item in national expenditure. The building industry is, therefore, in a favorable position where credit is cheap and the price of raw materials low, while, conversely, dear credit and high raw-material prices make its position more difficult. Whether the cyclical revival of this industry is influenced more by low prices of raw material or by low rates of interest remains, of course, to be demonstrated; and this is a problem which the theoretical school has evidently overlooked.

"To summarize: Even if it is true that the revival from a depression usually begins in the production of raw materials, this is probably far more closely connected with price conditions than with low money rates, if we view industry as a whole. Nor is it correct to say that the way in a revival must 'naturally' be led by those industries which produce producers' goods, as is indicated, for example, by the fact that an industry producing consumers' goods, like the publishing trade, is very actively productive during a depression. Publishing is economically akin to house building in this, that just as rents are fixed for years ahead, so the price of a book is not, as a rule, modified during the life of a single edition. Publishing, moreover, like house building, is in a position to profit by low costs of production. It is quite possible that further investigation might

But the borrowing power of none of these is independent of the condition of business. In the face of declining

bring to light the fact that other more important industries producing consumers' goods are in a similar position.

"Many representatives of the theoretical school evidently imagine that if the production of consumers' goods is to be revived, it is first necessary to create the productive resources for the purpose. The entrepreneur, however, appears not to be of the same opinion, for his attention is fixed not on national economic problems but on the possibility of securing a profit for himself personally. There is no inherent reason why the productive apparatus should not during a depression be sufficiently equipped to meet an increased demand for consumers' goods when it was perfectly well able to do so a short time previously, during the preceding period of prosperity. As we have seen, the way towards a revival is, in fact, led by an upward movement in the production of producers' goods; but the immediate cause of this does not lie in the necessity of increasing the quantity of producers' goods in order to secure increased output; indeed, even raw materials are actually exported during a depression. The cause is to be sought rather in the connection between the markets in which the trade cycle has full play and other economic spheres where the perpetual fluctuations of supply and demand are prevented from exercising their full effect on prices by certain customs and practices (price fixing, long-term contracts, and the like) the origin of which is, perhaps to be traced back to the epoch before the advent of modern capitalism. (See Chap. XXV).

"These observations, which, of course, are not put forward as a theory of the business cycle, but with a view simply to throwing light on a certain particular relationship, bring us back to the question of the significance in business affairs of credit fluctuations. I have, I think, succeeded in making it appear probable that the rate of interest plays a somewhat secondary part in the cyclical process. Such responsibility as can be attributed to it for the up-and-down movement is, however, independent of the banks in so far as its variations have their origin in the general fluctuations in the state of business. The banks can by no means be said to have no influence on the tempo and extent not only of the trade cycle, in general, but also of cyclical fluctuations in the several branches of business activity. They are able, in a number of ways, to shape credit policy, through their determination as to whom and on what terms credits are to be granted and the extent to which they will consent to grant supplementary credits. In the main, however, business proceeds unfettered by credit policy. Variations in the total volume of credit are determined far more by industry than by the banks." *Economic Rhythm*, pp. 192-195.

revenues there is little reason to expect much assistance from a theory based on increased borrowings of such elements in the economic organization. Much, of course, will depend on the severity of the depression. Slight reductions in prices and production might be to some extent corrected through these channels. But in a serious situation with the railroads finding difficulty in meeting existing obligations, with power consumption greatly reduced, with much vacant office space, and serious difficulties in municipal finance, it is too much to expect such borrowers further to increase their liabilities.

Reliance on Offsetting Difficulties in one Field by Stimulation of Others

The idea of government, particularly the national government, borrowing and expanding public works has gained wide popular and academic favor. A strong argument which meets one of the difficulties mentioned above, is that such expansion does not result in bringing more goods onto the market to be sold. There is a clear increase in the amount of income, or "money", over consumption goods. In addition there is a direct stimulus to the demand for construction goods.

Basically, such a program rests on the assumption that the difficulties with which some fields are confronted can be offset by stimulation of others. Attention is fixed on total incomes, and deficiencies in one field are to be offset by increases in others. In the same way, deficiencies in the demand for products from one source are to be made up by increased demand in others. Decline in the use of steel, for example; in the automobile industry would be offset by an increased demand for structural steel for government buildings. In so far as the program encourages these offsets, it is useful. But too often a greater fluidity of

capital and labor is assumed than is warranted. In a situation where the producers of wheat are faced with competition from more efficient methods at home and expanded plantings abroad, little can be done by indirection. Some capital, labor and land must be redistributed and no other policy will correct the situation. Whether the situation is dominated by conditions which can be offset or those which cannot, is open to careful investigation and should be so treated, rather than on an emotional basis. If the latter conditions prevail, the policy would be not only useless but harmful, for it would stimulate an artificial and temporary demand for products which, when curtailed, would leave a new series of maladjustments.

Rôle of Government Finance

A further difficulty is usually presented in the form of government finance. Too often the true nature of such a policy is overlooked in the wish for an expansion of credit. If the government is to play a part in a stabilization program it must be the balance wheel in the credit structure and maintain itself in a position to borrow when others have exhausted their potential credit. It must reserve a sufficient portion of its potential borrowing power or credit to meet the situation. When few others have borrowing power it must be able to come into the field as a heavy borrower.

When the government takes such action the position of the banks in the depression must be borne in mind. Since the government can borrow either on short term or long term it must prepare the way in both fields. At a time when banks are straining every facility to maintain their reserves they cannot be expected to absorb large quantities of government securities, either short term or long term. During a period of expansion, therefore, the government should liquidate a large portion of its short term indebted-

ness to the banks. It can then expect its obligations to receive better acceptance in an emergency.

In addition to the short term or bank loans, the government may rely on the issue of bonds. But these bonds play a peculiar part in American banking. They are generally looked upon by banks as a very liquid resource. In a condition of general banking strain, however, they can serve as such only by being sold to the public, not merely to other banks. In order to have them thus taken by the public, they must offer a fair return, say 4 or 5 per cent. Now if the government has been following a policy of issuing its bonds at very low rates, the banks will be able thus to improve their position only by taking a loss. If, in addition, the treasury brings out a large new issue at such a time, the difficulty is augmented. Furthermore, the government cannot now offer higher rates to attract the public to its offerings, for by so doing it will freeze the investment which the banks have already made in its bonds. It must therefore be prepared to pay higher rates on its issues during prosperous times.

All of this requires that government finance be guided partially by monetary needs. This would certainly be an innovation in treasury policy, for monetary requirements historically have been made subservient to government finance. When the credit control advocates have convinced secretaries of treasuries, chancellors of exchequers, and ministers of finance of these necessities, their case will be stronger.

Another variation of the theme of governmental assistance is that instead of borrowing for public works, etc. it is suggested that the government borrow to pay unemployment insurance. This has the advantage of going directly to the heart of the matter and of not only assisting in distributing purchasing power at a time when incomes are declining, but

putting such purchasing power into the hands of those who stand to suffer most by the inefficiency and inequality of the economic system. This appeals to one's sense of humaneness as well as to one's theoretical reasonings. Instead of hoping that in some roundabout way a general increase in spending will work around to the dislocated areas and set them right, the government places consuming power in the hands of those who would otherwise be left to starve until a bit of the additional purchasing power seeped into their industry. The complete theory of unemployment insurance cannot be discussed here, but it should include the factors of government finance mentioned above and provisions for liquidating the bonds issued as well as a program for the movement of labor, capital and land into uses which will sustain them in the exchange economy and out of those where they are no longer needed.

Importance of the Condition of the Central Bank

Thus far we have been concerned with the question as to "Who is to borrow" in order that an increased quantity of bank credit may be distributed and prices raised. But there is another line of attack which is often followed, namely, that it is not necessary to find borrowers. The banking system is to pump by main force more bank credit into business. This is to be carried out through the purchase of securities. The underlying assumption is that the central bank is wholly autonomous and that its condition can be entirely neglected. As a matter of fact it is not supreme, but must act as a member of the world banking community. Too rapid expansion of liabilities by one central bank subjects the reserves of the country to withdrawal by other countries, in the same way that too rapid expansion of loans by one bank, which is a member of a system, jeopardizes its reserves. The only alternative is to make the liabilities of the central bank irredeemable. Of the advisability of this we shall have more to say in the next chapter.

Within the limits of a gold standard, it is often assumed that bank credit is sustained by gold reserves. Furthermore, an expansion of central bank credit is expected to lead to a multiple expansion of member bank credit. But the concept of a credit system, outlined in preceding chapters of this monograph, leads to the conclusion that neither gold nor central bank credit is the source of member bank credit. The source is to be found in the debts of business. The credit structure is maintained by clearance. Without clearance there is no multiple expansion of credit on the basis of a given gold reserve, or central bank deposits. Without clearance banking becomes "money-lending", as a central bank would soon find through loss of reserves if it expanded its liabilities in the face of an unfavorable international financial situation.

Turning aside, for the moment, from international complications, we find that increased expansion of security purchases by the central bank, with a concomitant increase in its deposits, would not lead to multiple expansion of member bank credit. When it is attempted to reverse the sequence of business expansion and credit expansion, so that bank credit expands first, the purchases by the central bank will have only a single effect. Naturally, there will be some passing from hand to hand of this bank credit as the purchase of securities from one individual sets him free to purchase something else. But the additional purchasing power available to the community is only that which came from the first purchase by the bank. Unless it can be shown that others in the community will also use their potential credit to make purchases in such a way that their debts can be offset, there will not be a multiple expansion.

We have taken but the first step when we have assumed an increase of security purchases by the central bank. What is the effect of this on other elements in the community?

Importance of Banking Conditions

The first effect on the banks is to encourage them to reduce their borrowings from the central bank. For, by hypothesis, we are in a depression, banking resources are strained and resort has probably been had to borrowing by the banks.¹³ Thus the effects are nullified at the outset, the only result being a shift in the character of the central bank portfolio. But the banks can be surfeited with reserves if the purchases are continued long enough, international aspects aside. Yields on government bonds can thus be forced down. As the banks begin buying other securities, their yields also go down, short term rates in the meantime having been reduced. As security prices go up, additional borrowing through new issues is encouraged. But this last and crucial step in the theory is limited by the factors mentioned in the discussion of the effectiveness of reduced interest charges in stimulating borrowing. If the condition of prices and earnings prospects for industry are such as to discourage borrowing, in spite of the reduced interest charges, the rise of the security prices can only be temporary and they must eventually return to their former level, at the expense of those who have been influenced by the central bank policy.¹⁴ Thus the situation is worse than before.

The major objection to such a program is that there is no credit control involved at all. Banking liabilities are created on a large scale with no thought of how they are to be used, no thought as to how they are to be liquidated. The

¹³ "Thus the usual effect of a purchase of government securities by the Reserve Banks is a corresponding reduction in the borrowing of member banks." Burgess, *The Federal Reserve Banks and the Money Market*, p. 210.

¹⁴ "The retraction would inevitably depreciate the value of the securities into which its creation had lured the investor and an unpleasant impression would be created." *MacMillan Report*, Memorandum of Dissent by Lord Bradbury, par. 8, p. 266.

banks, which are already frozen as a result of the depression, are choked still further with securities and what eventually becomes of the funds is of little concern. The basis is thus laid for the next banking crisis. The seeds of a depression are thus planted in the preceding one.

Likewise in industry, anyone who wishes to borrow is encouraged with little reference to the ultimate success of his venture. Without correcting the maladjustments of the situation, new ones are encouraged. Thus, as in banking, so in business, the basis for a new breakdown is created.¹⁵ The stimulation would be short-lived, lasting only while the new investment in working or fixed capital was being made. If possibilities for expansion exist, it is much sounder banking to let industry seek the necessary financing, pay a slightly higher charge for it (which as all the evidence seems to indicate would not be a deterrent) and give the banks a chance to review and pass on the proposal.

Conclusions

I. Quantitative Control is Inherently Inconsistent

Finally, a theory of credit control which includes a policy for correcting a depression, or a decline in prices, is *prima facie* inconsistent with itself. It nullifies the whole discussion of the control of expansion, since it is admitted that this is impossible. If the expansion cannot be controlled, then credit cannot be controlled; if an increase of prices cannot be

¹⁵ Cf.

"Judgments had to be made whether further ease in the credit markets at that time (1921) would stimulate unhealthy tendencies in business." Reed, *op. cit.*, 14.

"It would be unsafe for the Bank to increase materially the total volume of credit without considering how it will be employed." *MacMillan Report*, Addendum i, par. 4, p. 191.

"In the first place, cheap money in the United States strengthened the tendency, already present in spite of a relative ebb of business in 1927, to a rise in the price of common stocks." *Ibid.*, par. 159, p. 71.

halted, the price level cannot be controlled. If we have a theory of banking policy which applies to rising *and* falling prices, then we assume that we are to be confronted with rising and falling prices and not with stable prices. If prices are to go on rising and falling, then the banking system, by following a policy guided by these changes, will only make the fluctuations worse.

This is evident in the theories of credit control themselves. Inevitably the question must be answered, "When is the credit-creating engine to be thrown into reverse?" If the restrictive policy is effective, and prices begin to fall, should the policy be reversed immediately? Should prices be permitted to fall by some predetermined percentage? A restrictive policy defeats its own ends, for, to quote Hawtrey,

in fact, once the rate of interest has begun to take effect and to depress prices, the fall of prices itself reinforces its effects. This is one more instance of a phenomenon which is constantly recurring in the theory of credit, and which is indeed at the root of the inherent instability of credit; a disturbing cause gives rise to ulterior effects which in turn have a tendency to stimulate the cause itself.¹⁰

And from Keynes,

Bankers are over-encouraged by the comparative ease with which they bring prices down, and think that the job is already done when only the first and easiest step has been accomplished; and they are then taken by surprise at the protracted period of unemployment and business losses which ensues before the money-earnings per unit of output are adjusted to the new equilibrium. For economists have tended to overlook both the *possibility* of a short-period divergence between prices and efficiency-wages and the impossibility of a long period divergence between them. We are often told (e. g.) that a rise of bank-rate causes *prices* to fall, which "makes a country a good one to buy in and a bad

¹⁰ Hawtrey, *Currency and Credit*, p. 129.

one to sell in", etc. etc. We are not told that a rise of bank-rate causes *wages* to fall. But if not, what is to happen to entrepreneurs and to employment? And if so, what is the nature of the transition from high bank-rate to low prices and from low prices to low wages.¹⁷

A protracted period of unemployment and business losses is undesirable, but how is it to be avoided if the rise of prices cannot be controlled? The logical outcome of the control theory as usually stated would be a constantly rising price level, for failing to control the increase of prices, and then attempting to prevent the subsequent decline means a desire for a constantly rising price level.

If attention is fixed on the depression phase (as the attention of English economists has been for the past decade or so), it is quite natural to devote major thought to methods of restoring the balance between wages and prices and getting the national economic structure in adjustment with those elsewhere so that international trade can once again go forward. One has the feeling that this is really the problem which interests Mr. Keynes, and not a general theory of credit control. If the national prices and wages are higher than in other countries, and if the reduction in prices to permit international competition means reduced wages and a protracted period of unemployment and business losses, and if it is desired to avoid these, then the most immediate remedy is to alter the relationship between the national money and that of other countries.¹⁸ But this is an expedient for dealing with a particular situation and not a general theory of control. For after the readjustment has been made, what is the policy to be? The MacMillan

¹⁷ Keynes, *Treatise on Money*, p. 272 (*italics his*).

¹⁸ One member of the MacMillan Committee expressed his views on this question as follows: "If reductions in the wages of the workers are unavoidable, then we will have them made in honest money. At least, we wish to know where we are and not to be made the victims of that

report states that, “. . . a point will eventually come when, taking the world as a whole, international prices will have been restored to a level which is appropriate to the then existing levels of salaries and wages and to the burden of monetary indebtedness.”¹⁹ But when this point is reached the problem of credit control still presents itself. We cannot assume that once this adjustment has been effected all will be well. An attempt to arrest the price rise at the point indicated may set in motion the train of events indicated by Hawtrey in the passage quoted above (p. 221). Then we should have to start all over again on an expansion program.

2. Declining Prices a Result of Rising Prices

If the decline of prices is viewed as a result of the rise, a different conclusion is reached. In the first place, the rise is not due to the increase in bank credit viewed as a distinct kind of “money” but to the wider use of that potential ability which business men have of acquiring goods without paying for them.²⁰ Now it is in this rise that the foundation for the decline is laid. Prices and production do not increase equally. At the same time large volumes of debts are contracted which it is hoped will be liquidated by the sale for use of the goods produced. But this test comes only after

supreme confidence trick, a price index to be compiled and corrected according to the conflicting estimates of a committee of economists whose minds would invariably be in a state of unstable equilibrium.” *MacMillan Report*, p. 245, par. 4.

¹⁹ *Ibid.*, p. 117, par. 274.

²⁰ “The power of purchase by persons having capital and credit, is much beyond anything that those who are unacquainted practically with speculative markets have any idea of . . . a person having the reputation of capital enough for his regular business, and enjoying good credit in his trade, if he takes a sanguine view of the prospect of a rise of price of the article in which he deals, and is favored by circumstance in the outset and progress of his speculation may effect purchases to an extent perfectly enormous, compared with his capital.” Mill (quoting Tooke, “Inquiry into the Currency Principle, pp. 79 and 136-138), *Principles of Political Economy*, vol. ii, p. 77.

some time has elapsed. In the meantime there is the risk of inadequate sales. Banking policy during this period should seek to avoid, to as large a degree as possible, involvement in this risk.²¹ When the maladjustment of production and prices becomes apparent, prices in some lines must be reduced and losses taken. Like the expansion, so the contraction, the movement tends to become cumulative. But the beginnings can always be traced to specific lines of activity.²² The interrelationships of the debt structure tend to spread the strains. How general the condition may become will depend on the extent of the interdependence, the volume of debts, and the heights to which production and prices have been pushed by the optimism of business and the use of credit.

When the decline sets in it is insufficient to say that an expansion of credit will correct it. What is usually meant is bank credit. But, as has been pointed out before, this is a secondary or derivative form of credit. The original source of credit is in business, the use of potential ability to purchase without paying. Used in this sense, it is seen that the increase in credit instruments reflects an increase of debt, and that the amount of unused potential credit has been diminished. Credit is Janus-faced, showing the purchasing power side in expansion and the debt side in contraction or depression.

²¹ Cf.

"It is Unextinguished Credit which produces those terrible monetary cataclysms which scatter ruin and misery among nations." H. D. MacLeod, *The Theory and Practice of Banking* (London, 1902), vol. i, p. 285.

"But, while many issues remain obscure, we believe that much may be done to prevent disequilibria arising through credit policy if action is taken in time. The primary causal disequilibria giving rise to a period of depression come into being during the preceding period of rising prices and active business conditions and it is while prices are thus rising that the necessary checks must be imposed." *Report of the Gold Delegation of the Financial Committee*, League of Nations, p. 40.

²² For a discussion of the 1921 depression along these lines, see Cassel, *Money and Foreign Exchange after 1914*, p. 234.

3. The Debt Problem in a Depression

The problem faced in a depression, therefore, is that of dealing with debts which cannot be paid. If the condition is not widespread, nothing need be done. The losses will be borne by those who have been over-optimistic. That is the essence of private enterprise, if one guesses rightly, he wins; if incorrectly, he loses. But when the difficulties have become widespread, there is a general feeling that something ought to be done. Particularly is this true if the proprietary equities are eliminated over a wide area of business so that the losses fall on those who had supposed that they had purchased fixed obligations. The degree to which the banks are involved is also important, for their failure has a more important significance than that represented merely by losses to the stockholders. Thus an important element in avoiding serious depressions is the revision of the financial structure of corporations. Trading on too thin an equity, holding company abuses, etc. should be prohibited and the prohibitions enforced during the expansion phase.²⁸

The usual method of treating the situation through credit expansion is as a rule the worst method. For it assumes that the source of credit lies in the banks and that this credit should be extended to those in difficulties. Farmers who cannot sell their products at a profit are "extended" further credit, thus pushing them deeper into debt; railroads which cannot earn interest on their fixed obligations are "extended" credit to meet their obligations, etc. These mis-judged values cannot be valorized in this way, for values are determined by sales and a debtor who cannot sell his products profitably is not aided by loans which enable him to keep his product off the market.

²⁸ Cf.:

"One of the major defects in the economic organization today is that debt has so largely taken the place of ownership." *Report of the Gold Delegation of the Financial Committee*, League of Nations, p. 18.

There are two other possibilities. One is a general all-around forgiveness of debts. This, however, throws the burden on those who had no part in the misjudgments which led to the inability to pay, and would be met with popular disapproval by those holding contractual obligations.

The same end can be accomplished by indirection through monetary policy. But this would be the reverse of what is usually attempted. Instead of lending more to those who are already over-indebted, the increase in the volume of "money" should be applied at the other end of the economic system; that is, it should be given to those who will use it in consumption. For it is in consumption that all values arise, first of all the values of consumers' goods, and from them the derived values of all forms of capital goods. But the government borrowings necessary to accomplish this would cause such a large expansion of bank credit on the basis of government bonds, that the program would be seen in its true light of a debasement of "money" and not credit control at all.

But, even on the assumption of a fiat paper money, or more accurately a fiat credit system, this solution does not offer a theory of management. For how often is this process to be permitted? If expansions of prices are not controlled, there must be a series of such devaluations or debasements of the money, a situation which prevailed so widely during the Middle Ages.

Therefore a theory of correcting price declines through credit expansion has no place in a theory of credit control. If the increase in prices can be avoided there will be no collapse of prices to correct. If the increase cannot be prevented, then the introduction of a program to correct decreases reduces to a proposal for a constantly depreciating money.

PART III
THE QUALITATIVE CONTROL OF CREDIT

CHAPTER VIII

CREDIT CONTROL AND THE GOLD STANDARD

Introduction

IN discussing the effects of attempts to control credit by altering the size of the reserve base we have been primarily concerned with movements of prices and production. In addition to these criteria it must be recalled that movements of gold, exchange rates and interest rates are important considerations in determining credit policy. Although it is possible, following classical doctrine, to show that prices, production, gold movements, exchange rates, and interest rates are related phenomena, there are many recent statements to the effect that the stabilization of prices is incompatible with adherence to an international gold standard.¹

In considering the various criteria of banking policy, therefore, the movements of exchange rates and gold are posited as antithetical to price movements and production. Keynes can see very little uniformity in them as guides, while Spahr, though setting up prices and reserves as independent criteria, suggests that a compromise policy is possible.²

¹ *Cf.*, for example:

"Thus the attachment of a portion of the mercantile community to a foreign banking system weakens the effect of the contraction of credit upon production." Hawtrey, *Currency and Credit*, p. 115.

"But when the condition of external equilibrium must also be fulfilled, then there will be no banking policy capable of avoiding disturbance to the internal system." Keynes, *Treatise on Money*, vol. i, p. 349.

"Bank rate policy guided and governed by the tendency of gold to move, is a means of maintaining the stability of the exchanges rather than the stability of business." *MacMillan Report*, p. 97.

² "The second strand is that which is generally uppermost in discussions by practical bankers. They regard Bank-rate policy primarily, not as a means of regulating the price-level, but as a means of protecting a country's gold-reserves by regulating the rate of foreign lending. The

The belief that the control of credit is incompatible with adherence to the gold standard is apparently based on the assumption that domestic equilibrium is upset by events in other countries. For example, if interest rates abroad should change those in force in the domestic markets must change, thus disturbing economic equilibrium.⁸ Or again, if some

point of raising Bank-rate, that is to say, is to make it higher relatively to the interest rates current in other international financial centres and so turn the balance of international indebtedness in our favour by influencing the international short-loan market . . . it is by no means obvious how it is connected with our first strand, and I know of no author who has attempted the synthesis. Moreover—superficially at least—it seems to pull in the opposite direction. For the object of raising Bank-rate is to attract gold or to prevent the loss of gold, so that its effect is to *increase* the basis of credit above what it would have been otherwise. It may be objected that the higher Bank-rate can only be made effective if the Central Bank reduces its other assets by more than it increases its stock of gold, so that the effect on balance is to decrease the aggregate of credit.” Keynes, *op. cit.*, vol. i, pp. 189-190 (italics his).

In a footnote to the above he adds:

“This is probably the underlying assumption of the traditional doctrine, i. e. that high bank-rate simultaneously reduces the aggregate super-structure of credit whilst increasing that part of its basis which consists of gold. Cf. Withers, *Meaning of Money*, pp. 276, 277. But I do not remember to have seen the accuracy of this assumption tested by reference to statistics. According to my theory, it would not be true invariably but would require various special conditions for its fulfillment.”

Spahr's view may be illustrated by the following passages:

“There are three possible principles involved in credit control. One is to regulate credit in such a manner that the price-level remains as stable as it is humanly possible to accomplish.”

“The second principle which may be followed is that of attempting to stabilize the reserve structure.”

“The third principle is a compromise between the first two. It recognizes that above all things safety must be secured and therefore, the minimum reserves must be protected. But when surplus reserves exist, then the policy should be one of price level stabilization. Reserves are ignored or impounded.” Spahr, *op. cit.*, pp. 23-26.

⁸ “Yet, as we have seen previously, circumstances may exist in which, if a country's rate of interest is fixed for it by outside circumstances, it is impracticable for it to reach investment equilibrium at home.” Keynes, *op. cit.*, vol. ii, pp. 303-4.

foreign banking system should expand its loans too rapidly losing gold in consequence, some of this gold might find its way to the domestic banks and lead to an expansion of credit and prices. A third possibility is that, with a stable price level at home, the balance of payments may be disturbed, leading to gold export, increased interest rates, and contraction of credit.⁴ Furthermore, if the rates are increased at home to curb an expansion of credit and prices, the effects of the restrictive policy may be offset by an inflow of funds and possibly of gold.

It would seem that if these contradictory conditions are to be dealt with in such a way as to maintain stability of the internal price level, gold movements should be ignored, and that the gold standard, as it is generally understood, should be abandoned. This would mean that the rate of exchange would be allowed to fluctuate, since its movements are the forerunners of gold movements. However, the advocates of price-level control through credit policy are by no means unanimous in such a recommendation. Keynes suggests that the rate of exchange be allowed to fluctuate by two per cent above and below the mint par. At the other extreme stand Hawtrey and the Gold Delegation of the League of Nations, who advocate the movements of gold and exchange rates as the guides to banking policy.⁵ Another group (which some-

⁴ "... just as the dearer money discourages foreign borrowers, so also it discourages borrowers for the purpose of home investment—with the result that the higher bank-rate diminishes I_1 , the volume of home investment. Consequently total investment falls below current savings (assuming that there was previous equilibrium), so that prices and profits, and ultimately earnings, fall, which has the effect of increasing B , because it reduces the costs of production in terms of money relatively to the corresponding costs abroad." Keynes, *op. cit.*, vol. i, pp. 214-215.

⁵ "An external drain is subject to much more rapid changes, and is therefore more susceptible of management. The outward sign of the conditions that cause an export of gold is an unfavourable exchange, and the problem of managing the currency constantly presents itself as the

times includes those who at some places in their discussion propose another policy), while apparently adhering to the gold standard, indicate that gold movements can be offset by central bank policy.⁶ Somewhere between are suggestions for compromises, sometimes the exchange rate is to be the guide, and sometimes it is to be disregarded in favor of the price level.⁷

Thus the student of banking is presented with the question, Is the control of the domestic price level incompatible with problem of inducing a favourable tendency in the foreign exchanges." *Hawtreys, op. cit.*, p. 110.

"The most important of these principles is that, as a general rule, gold movements should not be prevented from making their influence felt both in the country losing gold and in the country receiving gold. Not only should these movements not be prevented from exercising their influence, but their working should be reinforced by other means—especially by changes in the discount rates and by open-market operations—when the disequilibrium of which the gold movements give evidence cannot be removed merely by the effects of those equilibria." *League of Nations, Report of the Gold Delegation, 1932, par. 81, p. 24.*

"Broadly speaking, the United States continued throughout the post-war period to gain gold. . . . It had been the avowed policy of the Federal Reserve Authorities to regard this gold stock as a trust fund, and therefore to prevent such an expansion of credit in the United States as would necessitate the permanent retention of the whole stock as a permanent reserve. The policy of gold sterilization was the objective expression of this point of view." *MacMillan Report*, par. 158, p. 70.

"In view of the great importations of gold into the United States, the Reserve System more and more, after the close of the war, ceased to regard the ratio as an indication of any considerable influence with reference to rates, and in the annual report for 1923 already referred to, it expressly rejected the doctrine that there was any connection between the two, stating directly that while it is to the reserve ratio that the public in most countries looks to get an indication of changes in the banking position, the great rearrangement and redistribution of gold has altered this significance of the ratio, so that today 'the ratios have lost much of their value as administrative guides.'" *Willis and Steiner, op. cit.*, p. 522.

⁷ See footnote 2, this chapter, quoting Spahr, *The Federal Reserve System and the Control of Credit*.

the maintenance of the gold standard?. If so, shall the gold standard be abandoned? If the gold standard is abandoned, shall exchange rates be allowed to fluctuate without limit or shall such fluctuations be held to some predetermined percentage? If the gold standard is to be maintained, must banking policy be guided by gold movements and exchange rates or can the movements of gold be offset by central bank policy?

Gold Movements An Indicator of Maladjusted Industry

Our analysis of clearance (Chapter IV) serves to indicate the rôle of gold in a credit economy. From that study, we may conclude that the loss of reserves indicates a lack of equivalence of values in the exchange between various individuals and groups of individuals, within an economy. In discussing the maintenance of clearance between banking systems, we were in effect discussing the international aspects of this problem. Since there are so many proposals to abandon the gold standard in favor of a "managed currency", it seems advisable to expand this phase of the discussion in an effort to understand more clearly the meaning of the gold standard and the problems which would be involved in the management of an inconvertible currency. It will also lead to a clearer understanding of the problem involved in the maintenance of reciprocal exchange between various industries and geographical sections at home. The differences between the policies dictated by the quantitative and qualitative methods of control can also be readily contrasted.

As a key to an analysis of the situation we may take the statement of Hawtrey, that, "*the outward sign of the conditions that cause an export of gold is an unfavorable exchange.*"⁸ And the same might be said of an import of gold. Too often, the movement of gold as a sign of underlying

⁸ See footnote 5 in this chapter.

conditions is overlooked, and all emphasis is placed on the movement of gold itself. Gold movements are thus blamed for upsetting the financial mechanism and consequently trade, industry, or business. Instead, attention should be given to the conditions which caused the gold movement and the possibilities of correcting them. If these conditions cannot be dealt with in some other way, it will usually be found hopeless to attempt to deal with them through the monetary mechanism, and in the long run it will be better to allow the movements of gold to have whatever influence they may and thus effect a correction which, though painful, is necessary.

In examining the conditions which cause a movement of gold we shall also gain an insight into the significance of the gold standard which may assist in deciding whether or not it is a desirable monetary mechanism.

Causes of Gold Movements are Internal

The broadcast division of the causes of gold movements is into those which are due to conditions within a given country, and those due to conditions outside it. In the theory that internal equilibrium may be upset because some other country finds it necessary to export gold or to raise its interest rate to prevent the exportation of gold, there is the inherent assumption that the disturbing conditions lie outside the country under consideration. This view overlooks the fact that a country can neither gain nor lose gold unless its own balance of payments is such as to make it profitable either to import or export gold. This is to say, equality of debits and credits in the balance of international payments of a country is the equivalent of perfect clearance for an individual bank. It is the counterpart of equality of purchases and sales in the individual business. This clearance of debts against credits is in all instances the essence of the

credit system, it is that by which the credit system is maintained.

Under a simple organization of international economic relations, the nature of this balance was expressed in terms of purchases and sales of commodities between any given country and all others. If a country purchased as much as it sold, then it neither gained nor lost gold. The sales paid for the purchases through the clearing mechanism of banking. It is clear that a country could neither gain nor lose gold unless its sales exceeded its purchases or vice versa. But with the development of international financial relations to include not only temporary short term indebtedness, due to the variations in the flow of goods into and out of a country with the seasons, but also direct investment and security ownership across national boundaries, the relationships became more obscure. It is now no longer necessary for imports to equal exports.⁹ Differences may be made up by borrowing or lending, depending on whether the balance in the other items is unfavorable or favorable.

Causes of Gold Movement Dependent on the Stage of Economic Maturity of the Country

Under a system of international borrowing and lending, a nation can have only one of two trade balances; it can either export more than it imports, or import more than it exports. But it can have these trade balances under four different conditions, depending on the state of its economic maturity. The causes of disequilibrium in its balance of payments must therefore, be discussed separately for the varying conditions.

1. The First Stage

In a "new" country, one in which the amount of resources

⁹The terms "imports" and "exports" are here used to include all commodities (except gold) and all services such as transportation, royalties, tourist expenditures, etc., but not loans.

is greater in proportion to its capital than in more developed countries, the profit possibilities resulting from the use of more capital in relation to resources and labor are greater than elsewhere. Enterprisers seeking to take advantage of the greater profit possibilities within the country will, therefore, try to borrow abroad. A superficial view of the results of such a transaction leads to the conclusion that this will disturb the balance of payments of the "new" country. The banks will suddenly have more claims on foreign banks than before, and they are apparently then in a position to import gold. But by hypothesis, the purpose of the borrowing is to take advantage of profit possibilities in the use of more capital. Since the country is little industrialized, equipment will be cheaper in more advanced countries and imports of this nature will balance the borrowing in the international payments. The banks, therefore, will have no excess claims on other countries.

2. The Second Stage

The first stage is thus characterized by an import balance of trade which is offset in the balance of payments by loans. When interest payments become due, they must either be offset by a relative shift in the trade balance toward more exports or more loans. But if the latter conditions prevail, the time will come when annual interest payments will overtake annual borrowings and exports must exceed imports. This is the second stage—a favorable balance of trade and the excess credits thus obtained offset by the debits on interest account.

3. The Third Stage

In the third stage of economic development a country also has an export balance of trade but the financial conditions are different. With the increasing industrialization, foreign borrowing becomes less and less profitable. At the same

time, the profitableness of lending to other countries becomes apparent. Thus in this stage, the favorable balance of trade is offset by loans in excess of borrowing. The interest payments made to other countries are larger than borrowings plus interest payments received, so that the country is debtor on financial account and creditor on trade account.

4. The Fourth Stage

The fourth and final stage of economic maturity is characterized like the first by an import balance of trade. The financial situation accompanying it, however, is different. In the final stage, the amount of interest received annually on previous loans exceeds the volume of new loans. Thus the country is creditor on financial account and debtor on trade account.¹⁰

¹⁰ It may be of assistance to summarize the four stages briefly in terms of symbols.

I. Credits	Debits	
$B + E = I + I_{np}$		where $B > I_{np}$ and $I > E$
II.		
$B + E = I + I_{np}$		where $I_{np} > B$ and $E > I$
III.		
$I_{nr} + E = I + L$		where $E > I$ and $L > I_{nr}$
IV.		
$I_{nr} + E = I + L$		where $I > E$ and $I_{nr} > L$
$E =$ Exports $I =$ Imports $B =$ Excess of borrowing over lending $L =$ Excess of lending over borrowing $I_{np} =$ Excess of interest paid over interest received $I_{nr} =$ Excess of interest received over interest paid		

See Madden and Nadler, *Foreign Securities* (New York, 1927), ch. vii, for three of these stages.

Keynes states the problem of external equilibrium as follows:

Gold Exports by a Debtor Country

In either of the first two stages, gold exports might result from an excess of imports plus interest payments due other countries over new borrowings plus exports. The difference between these stages is that in the first there is a greater possibility of offsetting the excess debits by further borrowing. If this policy is followed for a long enough period, the country will soon be in the second stage, for since the interest payments will mount at the rate of compound interest, the volume of new borrowing will likewise increase in this fashion and it is unlikely that a country could increase its foreign borrowings indefinitely at the same rate. The problem of a debtor country thus appears to be that of improving its trade balance. The most critical period is the transition from the first to the second stage because during that period the trade balance must change from an "unfavorable" to a "favorable" one.

The significance of gold exports lies in the conditions of the domestic economy which they indicate. Some sections of the economic structure are being maintained by imports which other sections of the domestic economy are unable to pay for by exports. The difference between this condition and that of the simple case of imports paying for exports is that in the case of the debtor country, exports do not pay for a like amount of immediate imports, but are largely necessary for the payment of service charges on the debts incurred in the acquisition of capital equipment. The gold exports can hardly be considered a disturbing influence to

"... the problem of currency management presents itself not as a problem of keeping $I = S$, but as a problem of keeping $B = L$, where B is the value of the Foreign Balance and L the value of Foreign Lending..." *Treatise on Money*, vol. i, p. 213. This does not recognize the composition of the balance of payments in sufficient detail to indicate the alterations which must be made in different conditions of economic development.

domestic equilibrium. They merely indicate that the domestic economy is not in equilibrium. This is so even though the price level and production are stable. These superficial evidences of stability exist only because a part of the community is being maintained by imports from outside the economy, without compensation. The necessary condition for permanent stability namely, that the various sections of the economy mutually maintain one another, is not present.

It is argued that if the central bank followed the dictates of the gold movements and restricted credit, prices would decline, production would be curtailed and a general business depression would follow. Therefore, the abandonment of the gold standard is advocated. The substitute for the credit restriction would be a declining rate of exchange. But a declining rate of exchange would have quite as serious effects on the domestic economy as has the credit restriction. The prices of imported products would rise. If the central bank were following the price index as a guide to credit policy, a credit restriction would be indicated just as it would have been by the gold movements. Industries dependent on foreign borrowing for capital equipment would find it more difficult to expand, thus causing unemployment. This unemployment would lead to a decreased demand for domestic products, and all the symptoms ordinarily associated with a depression would follow. Furthermore, those who had to make interest payments on previous foreign borrowings would find difficulty in doing so and in some cases this might lead to bankruptcies.

It should be pointed out that exports might receive a temporary stimulation from the exchange depreciation which would continue as long as the depreciation was occurring. But this would be at the expense of foregoing foreign borrowing. There would not only be a reduction of foreign borrowing, but a total cessation, for the defaults which would

occur as a result of the exchange depreciation would so impair the credit of the country that other countries would not want to make further loans.

The gold exports are thus seen to indicate the necessity for the improvement of the trade balance, and possibly for the development of a "favorable balance" in case the country is passing into the second stage. Analysis of the conditions leading to the export of gold indicates the banking policy which should be pursued. Since the amount of interest payments is fixed by previous contracts, no immediate change can be effected in this direction. The ends to be accomplished are: an increase in exports, decrease in imports, and decrease in borrowing abroad. One or more of these may be necessary, depending on the gravity of the situation. The objections to the restriction of credit as a result of the gold export arise mainly from the fact that banking policy is thought of in quantitative terms. The central bank is thought of as raising rates and using open market sales to reduce the amount of member bank reserves. Thus a general restriction of credit, trade, and production may be expected to follow. It is a hit or miss policy which may or may not restrict foreign borrowing and imports, and can hardly be expected to increase exports. These, however, are the factors which the situation demands should be controlled. Furthermore, as was pointed out in Chapter VI, the effects of a credit restriction imposed quantitatively are most likely to fall primarily upon loans to the government, public utilities, transportation enterprises, and construction activities. The desire to avoid the effects of the credit restriction can readily be appreciated when it is thus presented, for it is apparent that the whole economic structure must be disrupted in order to accomplish the results demanded by the situation.

By considering qualitatively, the control of credit, it is possible to deal directly with the factors involved. As re-

gards the stimulation of exports, there is little that the banking system can do. Perhaps the department of commerce of the government might follow a "trade" expansion program. But if this is met with tariff increases abroad, overwhelming competition, or other opposing forces, it is useless to expect that the banking system can offset them. What it can do is to frown on the financing of import transactions through a more careful scrutiny of applications and by increasing refusals. We have seen in the analysis of the contraction of credit that ultimately the restriction of the central bank must be supplemented by qualitative restrictions by the member banks. We are here suggesting that the restriction be applied where it will do the most good rather than by a blind curtailment all around.

It may be that the banks of a country in such a state as that here outlined could do little to stop foreign borrowing. It may be that government intervention to discourage this will be necessary to give the required force to a restrictive policy. On the other hand it may be that the force of the opinion of the central bank on the financial community would be sufficient. With a central bank having for officers leading members of the financial community, such as the federal reserve banks have, their conclusions as to the nature of the situation might bear sufficient influence to discourage the upsetting activities. Looked at from the point of view of the creditor countries, it is evident that if they gave full attention to the condition of the debtor country, they would take these factors into consideration in making loans and thus would reduce the volume of credit extended.

Some evidence that attempts to deal directly with the international economic relations between countries may be seen in the introduction of foreign exchange control by many countries in recent years.¹¹ It may be that in this way exces-

¹¹ For a discussion of recent developments in exchange control see:

sive borrowing, lending, importing, and exporting will be avoided and the disastrous effects of banking policy brought about by maladjusted conditions prevented.

Gold Export by a Creditor Country

The transition from the second to the third stage is not likely to cause serious difficulties. A favorable balance of trade is compatible with both conditions, and having been developed during the second stage, it need only be maintained. The difference between the stages is brought about by a change from a debtor to a creditor country. Since international capital movements are not subject to so many restrictions as are trade movements, the alterations in the financial conditions are characterized by greater flexibility than are the alterations of trade positions.

Interest payments being a fixed quantity, the export of gold from a creditor country in the third stage is caused by a rate of annual lending in excess of the favorable trade balance. In the fourth stage, also, the rate of foreign lending is likely to be the cause of gold exports. In either stage, the gold exports may be interpreted, as in the case of debtor countries, in terms of excessive imports. Viewed in this way, the significance of gold exports as indicators of a domestic economy which is not in equilibrium would be the same as that discussed above. However, in the case of a creditor country it is more logical to interpret the gold exports in terms of an insufficiency of commodity exports.

The effect of this export of gold on bankers who are operating under the gold standard would be to cause them to attempt to curtail credit, through higher interest rates and closer scrutiny of applications. A central bank which attempted to follow the exchange rates and gold movements

as a guide would in reinforcing the effects of the gold movements, institute a restrictive policy of higher rates and open market sales. The objection to this is that such a policy would work hardships at home by discouraging investment or causing the price level to fall, thus bringing unemployment and falling wages.¹² The assumption is that all is well at home, and that there is no reason to inflict these hardships on domestic industry because the international transactions do not balance. But as in previous cases, it can be shown that there is something radically wrong at home and that a restriction should be instituted. However, some of the hardships would be averted if the restriction were applied where it was needed instead of in a general way, which is, moreover, the only way as long as we think in terms of total quantity of credit, total production and price indexes. In the case of excessive lending abroad, foreign lending should be curbed and where imports are excessive this activity should be restricted. It may be necessary to curtail both.

The rate of lending should be determined by the real rate of interest, which is determined by the profitableness of capital investment, or the earnings of capital. These in turn depend on wages. Now, if foreign lending is justifiable,

¹² See Keynes's statement, footnote 17, Chapter VII above.

Cf. also:

"Thus, what we have claimed in Chapter XIII as a virtue in Bank-rate regarded as an instrument for restoring long-period equilibrium—namely, that it works *both* ways, tending to decrease foreign lending and also to increase the foreign balance—becomes a vice, or at least an awkwardness, when we use it to check foreign lending, the excessiveness of which may be due to temporary causes without our having any wish to go through the painful readjustment of the wage-structure which must precede a material increase of the foreign balance. Since the influence of Bank-rate on foreign lending is both quick in taking effect and easy to understand, whereas its influence on the internal situation is slower in operation and difficult to analyze, the awkwardness of handling such a double-edged weapon is being but slowly realized." Keynes, *op. cit.*, vol. i, p. 350 (*italics his*).

then sufficient exports ought to be possible because the country is by the fact of its lower rate of interest more efficient. If the lending results in gold exports, then there is *prima facie* evidence both that its industry is not efficient enough to undersell other countries and that the rate of interest is too low. Thus the effect of an increase in the rate of interest would be to curb foreign lending by making the rate less attractive in comparison with other countries. This is objected to because it curtails investment at home. It does not appear that this is necessarily so. For if the savings are genuine, they will seek domestic securities instead of foreign, thus pushing up their prices, and lowering the rate of interest again. The function which has thus been performed is in testing the genuineness of the low rates of interest. Loans in excess of exports, when paid to third parties, come back on the lending country as demands for gold instead of for commodities. Thus the significance of the gold exports is that, although interest rates are in such adjustment as to encourage investment in foreign securities, the efficiency of domestic industry is not sufficiently above that of other countries to prevent excessive imports and stimulate compensating exports. A higher rate of interest is then not something which is caused by gold exports. These merely indicate that interest rates are out of adjustment and that more investment should be made at home before savings seek employment elsewhere.

The immediate effect of the gold outflow is the reduction of purchasing power in the hands of some members of the community. If the banks attempt to offset this by the creation of more bank credit, say through the purchase of securities by the central bank, they are continuing a maladjustment not only of the international clearings but of domestic ones as well. From the international point of view this reduction in purchasing power makes less available for the purchase

of imports, or foreign securities, or domestic products, the prices of the latter tending to fall, thus stimulating exports. Domestically, savings and investment are in equilibrium only because part of the savings are being sent abroad, uncompensated by exports. The price level is stable only because some goods are added from the outside uncompensated for by exports. If the effect of the gold flow is reinforced, the decreased purchasing power will cause either a decline in the amount loaned abroad, or reduced consumption of imports or domestic products, in which latter case their prices will fall. Thus a policy which sustains the lending deprives the community of the lower prices.¹³

Our suggestion here is the same as that previously made, namely that the restriction rather than being general and roundabout, should be specific and directed to the immediate causes. It should aim at the restriction of importing and foreign lending. The readjustment will not be without friction and difficulties to trade and industry, but at least it will in the first instance curb those elements which need curbing and if this results in disturbing the business of other producers it is unavoidable. The generalized restriction, on the other hand, starts out by upsetting everything else and hopes eventually to reach the cause of the difficulty.

There is another condition which might cause a creditor

¹³ Cf.:

"This means that the workers in an old country cannot obtain directly the benefit of its large capital accumulation, in the shape of higher wages, ahead of the workers in the rest of the world—except in so far as there is a drag on foreign lending due to the unfamiliarity of its investors with foreign outlets, to the risks, real or supposed, of lending abroad, or to discriminatory taxation (and the like) against such lending. Unrestricted foreign lending may lead to the more rapid growth of a country's wealth, but it does this by putting off the day at which the workers in the country can enjoy, in the shape of higher wages, the advantages of this growing accumulation of capital." Keynes, *op. cit.*, vol. ii, p. 313.

country to be faced with gold exports. This is the case in which its debtors are unable to maintain payments for debt service, while the creditor continues to make loans. At bottom, this is a result of insufficient imports by the creditor. When this condition is reached, new loans take the form of gold exports. This situation, the significance of which is the same as that discussed under gold imports by a creditor nation, requires a restriction of exports and lending.

Gold Imports by a Debtor Country

The import of gold into a debtor country is the result of foreign borrowing in excess of the unfavorable trade balance in the first stage. It is probably best interpreted in terms of the relationship between borrowing and importing. In the second stage, although it is characterized by an export balance of trade, the gold imports are still most correctly thought of in terms of the relationship between imports and borrowings. This follows from the supposition that the borrowing occurred in the effort to secure capital goods or manufactured products from other countries. This is the usual situation in a debtor country.

The importation of gold is most likely to occur during the period of transition from stage one to stage two. As the country becomes more industrialized, it will be able to supply itself with more of the products which it previously imported, thus reducing the necessity of borrowing and importing. The incoming gold will enable those receiving it to purchase part of the domestic production, thus reducing exports, or to purchase abroad, thus increasing imports. At the same time, it will tend to lower interest rates and to make borrowing abroad less profitable. The gold imports are thus a signal that the time has come when foreign borrowing need be relied upon to a lesser degree.

On the assumption that the inflow of gold will cause a

rising price level or disturb the equilibrium of savings and investment, it has been suggested that the central bank prevent bank reserves from being affected by the sale of securities. This proposal overlooks the significance of the gold imports as an indication of the state of the domestic economy. The increasing efficiency of the country is making the exports possible. If these are resulting in gold imports, the workers in the community are being deprived of part of their consuming power when the gold is "sterilized". The "sterilization" keeps the price and wage level lower in relation to those in other countries and at the expense of the standard of living of the community prolongs the period during which the process of borrowing abroad and manufacturing for export is profitable. The gold imports do not destroy the equilibrium of the domestic economy. It is already out of equilibrium, for any stability of the price level which may exist is maintained only by preventing the community from exerting an amount of purchasing power for goods or securities equal to the amount of the "sterilized" gold.

Gold Imports by a Creditor Country

An import of gold is more likely to occur in the case of a creditor country than in that of a debtor. A debtor nation is subject to the necessity of developing an export balance of trade. This is particularly true during the transition period between the first and second stages. Similarly a creditor nation is under the necessity of increasing the proportion of imports relatively to exports, a process which finally culminates in an import balance in the fourth stage. As the problems of creditor nations have been of importance to the United States and England in recent years, we shall give detailed attention to this subject.

Although the main lines of analysis are the same as those which have been discussed, there are differences in the em-

phasis which must be given to the various factors. The banking policy to be followed will also be different from that in other stages. Many of the problems discussed will be familiar to the reader because of their prominence in recent events.

When a country in the third stage begins to receive gold it can hardly be said that the export of this gold from foreign countries is due to conditions in the foreign and not in the lending country, even though the price level in the latter has remained stable. Its internal equilibrium is no more upset than is that of an individual enterprise when its creditors cannot pay. By making sales on credit, a business concern may be able to maintain production at an even pace. But if the result is to place a larger burden of debt on its customers than they are able to pay, the equilibrium was only apparent in the first place. The same is true of a nation which is maintaining a stable price level and balanced production by selling to foreign countries more than they are able in the long run to pay for by exports. Credit relationships are always reciprocal and gold movements are only the outward sign of underlying conditions. If one country has borrowed too much, another has loaned too much, and if the one which has borrowed too much loses gold, the one which has loaned too much will gain gold. If one country has bought too much and loses gold, the one which sold too much will receive it. We can, therefore, look to the balance of payments of a country which is gaining or losing gold for the explanation of the movement. With gold coming in as a result of a trade balance in excess of loans, it is objected that the gold influx will upset the domestic equilibrium either by causing the price level to rise or by forcing down the rate of interest and thus upsetting the balance between saving and investment. But although the level of prices is mathematically steady, and although the rates of saving and investment are apparently

equal, it still remains true that the economy of such a country is maladjusted. This is true domestically as well as internationally, for the production of the goods which have been exported should have given rise to income to be used in the purchase of other goods. But what has been received in exchange for the goods exported? Savings are apparently not large enough to increase foreign lending sufficiently to offset the exports and those who have made sales to the exporters have not received an equivalent in imported goods. If the domestic economy is to be balanced within itself, then the exported goods must be sold at home and it will become evident that the price level is not stable, for these increased sales will force down the prices of the goods involved. Superficially it would appear that a readjustment would be thus affected and that the rate of efficiency earnings at home would go up. This does not necessarily follow, at least not immediately. For the readjustment of the prices may bring failures among the exporters, throwing men out of work, decreasing the amounts which they have previously purchased from domestic industries, and thus causing difficulties in those branches of industry and trade. The readjustment of an economy which is overdeveloped in some lines is not a simple matter of altering the general price level. Nor is the maintenance of equilibrium merely a matter of preventing the price level from changing. And, if stability of the domestic price level is dependent on exports which are not balanced either by imports or loans, the equilibrium of the economic balance rests on the removal of some of the goods from the circle of exchange without compensation.

In the fourth stage, a country is probably most susceptible to gold imports. The major credit items in the balance of international payments are the interest to be received and the payments for exports. The major debit items are new loans and imports. The interest items are a predetermined quan-

tity depending on previous loan contracts. They are also by hypothesis substantial and are really a primary cause of disturbances in the equilibrium of payments because of the fixity of their amount. The other items, so to speak, must be adjusted to them, for disequilibrium cannot be corrected by alterations in this sum. As in most economic problems, difficulties in international relations are likely to be most acute during transition periods. A country, passing from the third stage to the fourth stage, is confronted with the necessity, brought about by its financial relations, with other countries, of reversing its trade balance from a favorable one to a unfavorable one. These financial relations, on the other hand, are not incidental or superficial or the result of chance. They are the reflection of fundamental differences between countries in the earnings of capital. The difficulties which they cause are at root the result of the separation of financial and commodity transactions in a modern economic community in the sense indicated by Keynes in the distinction which he makes between "savings" and "investment". That is to say, while a balance of trade which harmonizes with the financial relationships must exist, each goes its own way independently of the other.

During the second and third stages, when there is a favorable balance of trade, industries depending more or less largely on export markets develop. When the fourth stage is reached, these have become integrated with the rest of the economic system in the sense that the part of the population engaged in the export industries receives from other members of the community the goods which it consumes. Those who supply the workers engaged in the export industries receive their compensation in the form of imports, and savings in the form of foreign securities. When the fourth stage is reached, the proportion of this exchange between the members of the home community which consists in imported

goods must increase, otherwise the domestic economy is out of equilibrium, for those who are maintaining the workers in the export industries receive nothing in exchange.

The import of gold is thus either a sign that the volume of new lending is not keeping pace with the exports or that imports are not growing rapidly enough in relation to interest payments. The second of these is the more important. For, with the steadily mounting receipts on interest it is unreasonable to expect that the annual volume of new loans can grow indefinitely. In order to offset a favorable balance of trade plus the increments to interest receipts, the volume of new loans would have to increase annually at the rate of compound interest. There must come a time when the interest receipts will exceed the annual new loans and at that time, imports must exceed exports. This gives us a clue to banking policy in regard to the inflow of gold. Shall its effects be offset, reinforced, or the rate of exchange allowed to increase?

There has been frequent expression of the opinion that this inflow of gold can be offset through banking policy.¹⁴ The thought is that the importation of gold is a disturbing factor in the domestic economy. It is likely to depress interest rates, and to cause prices to rise through the expansion which it initiates in bank credit.

There are obvious limits to the degree to which this influx of gold can be offset. The chief of these is the quantity of

¹⁴ *Cf.*, for example:

"The successful management of the dollar by the Federal Reserve Board from 1923 to 1928 was a triumph—mitigated, however, by the events of 1929-30 for the view that currency management is feasible, in conditions which are virtually independent of the movements of gold." Keynes, *op. cit.*, vol. ii, p. 258.

"Under the wise guidance of Governor Benjamin Strong of the New York Bank they pursued a policy of stabilization, which prevented any serious fluctuations of the price level from 1922 to 1929." Hawtrey, *The Art of Central Banking*, p. 209.

salable assets which are held by the central bank. When these are gone, and the member banks out of debt, any further inflow of gold is so much clear gain in the reserves of the member banks. Interest rates will decline in spite of an effort of the central bank to keep its own discount rate up, for since it is not acquiring assets its rate has no influence whatsoever.¹⁸

But a more interesting question is whether the inflow of gold is really the disturbing factor which it is assumed to be. If it is not, then its effects should be reinforced by bank policy; if it is, then the gold standard should be abandoned. The reinforcing policy would be one which reduced interest rates and made borrowing easy. The effect of this on the international balance of payments would be to stimulate lending abroad. This is the only factor in the balance of payments which can be sufficiently influenced by banking policy to correct the disequilibrium which is causing the gold imports. If there has been a temporary decline in the rate of foreign lending and it can be expected that the required rate will soon again be in force, the decline in the rate of interest may prove a sufficient stimulus to short-term lending to tide the situation over until these short-term loans can be refunded by long term issues. On the other hand, it may be necessary to bring market rates down to the real rate which should prevail as a result of the higher rate of efficiency earnings of capital as compared with those abroad. This is to be expected in the case of a creditor country. Thus the gold imports would lead the banks to recognize the real situation, which might be sufficient to correct the gold flow by increased lending.

¹⁸ Cf.:

"Under a gold standard no system of management can stand up indefinitely before a continued influx of gold of an amount far greater in proportion than the growth of balances required by the banking system at large." Keynes, *op. cit.*, vol. ii, p. 259.

But, as we have pointed out, there is a limit to the extent to which a country can extend the volume of its annual foreign investment. If this limit has been reached, and real and market rates of interest are in adjustment, or if questions of risk are at the root of the disequilibrium, then there is but one alternative, the balance of trade must be shifted toward a greater proportion of imports. Assuming that this is the condition which a country is in, then the inflow of gold is not a disturbing factor to the domestic economy. The domestic economy is already maladjusted in the sense that part of the goods produced are not fitting into the exchange process at home, and are leaving the country without being offset by imports or securities. The stable price level is fictitious. Someone in the community is being deprived of consumption or savings to the extent of the unoffset exports. The inflow of gold is the concrete evidence of this purchasing power, this right to additional wealth which is available to the community. If those in control of the banking system attempt to offset it, they are aiding the continuance of inequality of exchange between members of the community.

If this gold becomes available as purchasing power, that is, if it is not offset, it may have the following effects. It may either increase the demand for domestic goods, thus absorbing some of the exports, or stimulate domestic investment, or it may stimulate the demand for foreign goods, thus increasing imports. There might be a slight rise in prices but there is no reason to suppose that importers would in all cases insist on higher prices before they accepted further orders, or that those who are exporting would ask higher prices if more goods were bought. If the purchasing power thus made available first comes into the hands of those who prefer to engage in industry, there may be an increase in investment and subsequently an increase in income which then can be spent for commodities, as indicated above. Thus

we see that allowing the gold to become effective as purchasing power really restores domestic equilibrium, through drawing the previously unbalanced commodities into the domestic exchange process or substituting for them imported goods. Or it may stimulate domestic investment since by hypothesis people are not increasing the holdings of foreign securities, otherwise the inflow of gold would not have taken place. This increased domestic investment may lead to higher prices temporarily but when the goods resulting from this investment come to the market these prices cannot be sustained. The net result is the absorption of additional goods by the domestic market which previously did not enter into the equilibrium of exchange either at home or abroad.

There may be some industrial disturbances as a result of these shifts. But there will never be devised an economic system, based on the division of labor, which can meet without difficulties the shifting demands of consumption and the consequent transfer of capital and labor. The least that can be done is to refrain from augmenting the ultimate difficulties by policies which prevent the readjustments from occurring when the need of them is evident. In this instance, offsetting the effects of the gold imports would only encourage the further exportation of goods which would remain uncompensated, either by imports or foreign securities, thus delaying and magnifying the readjustment which would ultimately be necessary. The error lies in assuming that the gold import "just happens", thus upsetting the domestic economy, instead of taking it for what it is, an indication of maladjusted production and consumption and attempting to set this right as soon as possible before it becomes worse.

The theories which view the gold imports as a disturbing factor emphasize its effects in increasing the level of prices. This is supposed to come about in ways indicated by the different theories. In the simplest form, the increase of

bank reserves expands bank credit, hence there is more purchasing power and higher prices. It is also frequently assumed that the expansion of bank credit is some multiple of the increased reserves and hence the increase in prices is magnified. We have previously pointed out the error in this assumption, namely, that the support to the expansion of bank credit is clearance and not gold. Furthermore, as was also pointed out, the mere possession of gold by a bank does not increase the potential credit of the community. Receiving gold, a bank does not alter its lending policy. If the importation of gold improves the credit position of customers of banks, or the condition of member banks, then they are entitled to the increased purchasing power, and no fetish of a mathematically stable price level should be permitted to interfere with the establishment of the equality of exchange, or the correction of a condition in which some members of the community are sustained by the rest of the community in the production of goods which do not enter into exchange either at home or abroad.

The other theories emphasize the effect of the lowered interest rates on investment, either through cost or capital value. Of this we have spoken above where we discussed its relation to the re-establishment of adjustment between the elements of the domestic economy. In the last analysis an increase in the level of prices and income might be necessary to place the country in its proper relation to others, as determined by the efficiency earnings of workmen. Otherwise, the more productive creditor country would have no advantage over less developed countries in competition for internationally sold goods.

Summary of the Significance of Gold Movement

A credit system exists by virtue of the fact that it permits the indirect exchange of goods whose values are stated in a

common denominator of value. Credit instruments record the values of goods bought and sold and are liquidated by offset. The process is well illustrated by international economic relations for it is easy to think in terms of one country in its relation with others. Furthermore, the necessity for an equality in the debits and credits on international account has long formed an integral part of economic and monetary theory and the principles are therefore generally familiar. For this reason we have presented the international aspects of credit control first.

As long as equilibrium is maintained in the balance of payments, there is no movement of gold. We have tried to show how far that equilibrium may be secured through additional borrowing and lending. Gold movements thus become indicators of an inequality in the exchange of goods. This inequality is quite as much within the domestic economy as in the international. A banking policy which attempts to ignore the gold movement in the hope of avoiding its "disturbing" effects prolongs and aggravates the maladjustment when the gold standard is adhered to. If the gold standard is abandoned, the effects on the domestic economy are no less disturbing than those following a credit policy dictated by the gold movements.

In and of themselves, the gold movements do not insure a smooth flow of trade and an easy adjustment to new conditions. They are, as a matter of fact, likely to cause serious disturbances to the economic structure. This, however, is the result of previous credit policies which have permitted the development of maladjustments which may be brought to light by gold movements only after they have existed for some time. The corrective measures are then likely to cause such serious maladjustments as to encourage efforts to avoid them. Gold is usually made the scape-goat and blamed for the ills that have befallen the community.

The aim of credit control should be the avoidance of the development of maladjustments. The potentialities of the credit and banking system should not be abused, but should be employed in such a way as to accomplish the primary purpose of offsetting obligations; those which cannot be offset should not be incurred, thus avoiding the necessity of liquidating them in gold.

The Abandonment of the Gold Standard

The functions of the gold standard cannot be discussed without specific attention to the proposals to abandon it. There are two main lines of approach. One emphasizes the shortage and maldistribution of gold. The other asserts that the abandonment of the gold standard clears the way for alternative means of securing an adjustment in the industrial and financial relations of one country with others and between various groups within a country.

1. Gold Shortage and Maldistribution

The first view oversimplifies the situation and places the emphasis on the wrong elements. In the *MacMillan Report* the decline in prices is attributed to the maldistribution of gold.¹⁸ It should be obvious that the maldistribution is due to the course of trade and that this itself is maldistributed. That is to say, some goods are being disposed of without equivalent values flowing in the other direction and thus the banks are called upon to provide this value in the form of gold.

The basic error in this view is an over-emphasis on the monetary system and the assumption that a breakdown in financial relations causes a breakdown in trade and industry and prices. It arises out of a false analysis of money, through which credit is looked upon as a form of money in

¹⁸ "A maldistribution to which is to be attributed a large measure of responsibility for the heavy fall in prices in recent years." *MacMillan Report*, par. 151, p. 67.

the sense of being a substitute for gold. This concept we have reviewed in an earlier chapter where its unsatisfactory character was pointed out. The price level as the representative of the value of money becomes all important. Changes in the level of prices come to be looked upon as results of changes in the value of money. Realizing that little can be done to alter the supply of gold, it is hoped that the level of prices may be controlled through superficial regulation of the demand for gold.¹⁷ But the demand for gold cannot be regulated, for as we have seen, it is the result of the complex interaction of various groups in an exchange economy. But as long as the problem is dealt with in quantitative terms alone all of the intricate variations in reciprocal demands for goods, the variations in production, are averaged together in production indexes, price indexes and volume of credit. When one does not get beneath the surface of gold movements, he is likely to make such suggestions as that creditor countries which are receiving gold could alleviate the difficulties which are growing in debtor countries by merely lending more. The conditions which make lending possible are entirely overlooked and the conditions which establish trade are not taken into account.

A recent statement of what banks are supposed to be able to do is found in the following statement by Sir Arthur Salter.

What could the gold countries do, especially the two with a large gold surplus?

They must first perhaps see that their own banking system is so supported as not to threaten large-scale default or insolvency and lead to personal hoarding of gold. Subject to this they

¹⁷ "Apart from this, gold has depended, and will continue to depend, for its stability of value not so much on the conditions of its supply, as on deliberate regulation of the demand." Keynes, *op. cit.*, vol. ii, p. 294. See also "Memorandum of Dissent" by Professor Gustav Cassel, *Report of the Gold Delegation*, p. 74.

could first bring back prices toward their 1929 level by creating as much new money as their stock of gold will bear without endangering the gold parity of their currencies. This policy will be useless unless it is allowed to have its normal effect on the course of trade, increasing internal prices and imports and diminishing exports; an unattractive prospect but perhaps better than the only alternative, which is that the whole adjustment, and not a part only, should be at the expense of their exports.¹⁸

We shall not discuss the bank-failure record in this country during the past three years as evidence that our banking system is not supported against default as he indicates it might be. The important point is the recourse to a general increase in prices to correct a defect in the international trade of the country. This is supposed to increase imports and decrease exports. But even the author of this proposal recognizes that the business men of the country must agree to allow the increase of imports to take place. If they will be willing to do this after the expansion of credit takes place, why not do so before? If they are unwilling to reduce tariffs before the credit policy is adopted, why should they willingly do so afterward? And what would happen if they used the additional credit to finance further exports with no increase in imports? In either case the business men of the community must come to the realization that trade is reciprocal. Although he probably does not intend to, Sir Arthur has given most convincing proof that the banks are the handmaids of business and not its master. They can finance trade if there is trade, but they cannot force trade where there is none.

2. Fluctuating Exchange Rates

In the greater part of his *Treatise* Keynes adopts the more complex view and does not suggest the abandonment of the

¹⁸ Sir Arthur Salter, K. C. B., *Recovery, the Second Effort* (New York, 1932), pp. 328-29.

gold standard merely on the basis that there isn't enough gold to go around, or that a maldistribution has made it impossible for some countries to operate a gold standard.¹⁹ He even admits that in the "long run" there is no divergence between the rates of interest applicable to domestic and international conditions. It is merely during these "transition periods" (which have bothered economists for so long) that difficulties are encountered.²⁰ His solution of the difficulties in which England finds herself, is devaluation, as contrasted with the program which would have to be followed if the gold standard were to be maintained. On the other hand, the United States, also a creditor country, should ignore the gold imports; in fact, the assumption that they have done just that has been hailed as a triumph for managed currency.²¹

It seems logical to suppose that ignoring a "transition" will not help in getting through it. Perhaps if the United States had not ignored its transition, or if England had recognized hers, or in fact, if the whole world had admitted the transition necessary after the world war, the ultimate results would not have been as bad as they are. If the United States had recognized—if its industrialists had realized—the implications of its newly acquired position as a creditor

¹⁹ The same thought is expressed in the *MacMillan Report*:

"Indeed, even a large increase in the current supplies of new gold would not do much good so long as the causes persist which have led to the present maldistribution of gold. For the additional supplies would soon find their way to the same destination." *MacMillan Report*, par. 154, p. 69.

Cf. footnote 16 above.

²⁰ "Now changes of bank-rate which are aimed at preserving equilibrium between B and L may be expected to exercise a disturbing effect in the first instance on the equilibrium between I and S. But we shall see that—apart from the difficulties of the transition—there is always a level of bank-rate which is compatible in the long run both with the equilibrium of B and L and also with that of I and S." Keynes, *op. cit.*, vol. i, p. 214.

²¹ See reference to Keynes, footnote 14, this chapter.

nation in the fourth stage of maturity, and had adopted a policy which would have aided the development of an import balance instead of adopting as they did one leading to an export balance, some of the present difficulties might have been averted. Or if they had realized that this would be a slow process, our bankers might have been a little less eager to increase foreign lending as rapidly as they did. Certainly it is not for the bankers to ignore tariff legislation and attempt to act as if it did not exist, or to attempt to offset it. If it cannot be prevented, then they must act in accordance with it. They cannot create values of themselves. It is useless to ask for more lending to debtors who are unable, through our own policy, to meet their existing obligations. Perhaps if the English bankers had realized their transition, they also would have been less willing to lend. All of these readjustments require the cooperation of government and industry. They cannot be accomplished through banking policy alone. The banks can finance trade, (sales *and* purchases) they cannot create it.

There may come a time in the history of a country when its economic system becomes so badly adjusted that drastic measures need to be taken to help it get righted. By following a policy of neglect long enough, sufficient maladjustment may develop so that devaluation is a more expedient method of meeting the situation than is contraction of credit. But the situation should be recognized for what it is, a partial repudiation of debts all around. The country must then set to work to correct the difficulties.

At the risk of being tedious, let us repeat in more concrete terms what we have said before. The export of gold indicates not only that the external balance of payments is upset, but also that the domestic economy is not in equilibrium. To illustrate the significance of fluctuating exchange rates let us substitute for "imports", "clothing"; for "exports",

"grain", for "domestic products", "food", and for "country", the Federal Reserve District of Minneapolis. Imagine that a large section of the population is engaged in the production of grain which is exported. Further, suppose that those so occupied are maintained through the production of food by other members of the same district. And finally, all use clothing which is imported. For simplicity, let us suppose that financial transactions, borrowing and lending from outside, are negligible. Now a situation arises in which income from grain sales falls off. An unfavorable balance of trade exists, gold flows out. Let this develop into a serious situation. Shall the Federal Reserve Bank of Minneapolis, go off the gold standard, or restrict its loans? Suppose that they want to "keep the domestic price level from falling", and continue to extend credit to the growers of grain so that the volume of credit does not contract as a result of the gold exports. The grain growers continue to consume food raised by others, and they all continue to consume as much clothing as before. The obvious result is that the producers of food maintain the growers of wheat without receiving reciprocal value in exchanges. Credit has been inflated, for it is being established on the books of the banks at a more rapid pace than the creation of economic values. It may still be in harmony with "production" but part of what is being produced is not entering into exchange either at home or abroad. Also there is no unemployment, but the grain growers except for the fact that they get more exercise might as well be engaged in twiddling their thumbs. They are certainly not employed in an economic sense.

Who would hear of the Federal Reserve District of Minneapolis going off the gold standard! But why not? In some parts of the world it would certainly be a country in itself with the assumed right of having a fluctuating exchange rate if it wished. What the situation requires is the shifting of

some of the grain producers into other industries. They may have to be forced to go bankrupt to encourage them to do so. This, although painful, seems the most effective way. Going off the gold standard would merely indicate that the whole district was going to settle for so many "cents on the dollar". This might be necessary because of the acuteness of a situation which has been developing over a period of years. And after this had been done, it would be necessary to alter the nature of production within the area or the whole process would have to be gone through again. That is, there would be a continual depreciation of the rate of exchange.

It may very well be that the English situation at present can best be met by devaluation. Perhaps the pound was revalued at too high a figure in 1925. At any rate prices and wages seem to be too high internally to permit successful competition of British exports in the world market.²² But this cannot be offered as a theory of credit control. In his *Treatise* Mr. Keynes allows for only a small fluctuation in the rate of exchange—four per cent. The assumption is that any disequilibrium in production could be corrected by this amount of variation. He assumes that when the rate of exchange has reached the limit, the banking system can then control the situation. But if it can control it at that figure, why not at par? The introduction of this variation would only be a new disturbing element.²³ There would be a return to currencies of uncertain value such as existed in the United States prior to the establishment of the national banking act and in the world at large after the world war.

²² See *Report of the Gold Delegation*, League of Nations, 1932, p. 15.

²³ "In addition to the difficulties of management inherent in such a system, there would arise once again the continually varying foreign exchange rates which the Genoa Conference regarded as so serious an impediment to the restoration and extension of international trade. The virtual elimination of this exchange uncertainty was the main monetary achievement of the last decade." *Report of the Gold Delegation*, League of Nations, 1932, par. 79, p. 24.

The export of gold, therefore, indicates unbalanced trade. It indicates that there is not exchange of equivalent values. And a banking system, or a bank, or any group of banks which is losing its gold or its reserves, is providing credit to someone who is not producing values equal to those written on the books of the bank. Credit must be restricted. And credit would have to be restricted with any type of monetary system which attempted to maintain such economic balance—justice, some might call it. This would be true even if there were no gold standard, but a “managed money”.

The Value of the Gold Standard

Quantitative control through the central bank, however, can offer only a *general* restriction. It would be much more direct, and in the long run much less drastic, to restrict that which is uneconomic,—in the example above, the grain growers. The value of the gold standard is found in the concrete reason which it gives the banker for his action. He can refer to his own imminent bankruptcy, or to that of his customer, unless he takes this step. Without it, his case would be weaker, and through political pressure, influence of business men on the directorships of banks, and public opinion of workmen, there would be a tendency to continue lending to those who no longer had an economic right to bank credit, thus prolonging the disequilibrium. When we can find an economic system based on the division of labor, in which concerted intelligent action of industrialists, farmers, and bankers can keep an equivalence of exchange values of the goods produced, then the gold standard can be abandoned. Until then it serves the useful purposes of pointing out maladjustments and forcing the readjustments necessary. This is the real problem behind the management of money.

Reasoning quantitatively, the time for the abandonment of the gold standard seems much closer. For since most of our media of exchange are credit instruments, it seems rea-

sonable to suppose that gold might be dispensed with altogether.²⁴ The world seems to worship gold when it forms the largest element in the monetary system, "but when gods are no longer seen in a yellow panoply walking the earth, we begin to rationalize them; and it is not long before there is nothing left."²⁵ But the god is far from disappearing from the world as yet. He will not disappear in this manner. From the volume of controversy about the gold standard, one would not gather that gold had ceased to walk the earth. Although the amount which is actually used in exchange is relatively small, it appears to be of tremendous importance. The *way* in which gold will disappear, will be through the organization of banking in such a way that the clearance of credit and debt can take place over the whole world and this can take place only *when* the management of credit is so conducted that the clearance actually does take place. Then there will be no need to export or import large quantities of gold, to force bankers to mend their ways and to bring about such adjustment of production that goods will exchange without leaving unpaid balances. But we are yet from this point of view a long way from abandoning the gold standard. The yellow god still walks the earth, and though infrequently, yet with a terrible vengeance, and with at least enough force to set parliamentary committees to work, to cause long congressional investigations, and lengthy reports by the League of Nations.

²⁴ "Thus the long age of Commodity Money has at last passed finally away before the age of Representative Money. Gold has ceased to be a coin, a hoard, a tangible claim to wealth, of which the value cannot slip away so long as the hand of the individual clutches the material stuff. It has become a much more abstract thing—just a standard of value; and it only keeps this nominal status by being handed round from time to time in quite small quantities amongst a group of Central Banks, on the occasions when one of them has been inflating or deflating its managed representative money in a different degree from what is appropriate to the behaviour of its neighbors." Keynes, *op. cit.*, vol. ii, p. 292.

²⁵ Keynes, *Treatise*, vol. ii, p. 291.

CHAPTER IX

THE THEORETICAL BASIS

Evidences of the Qualitative Nature of Credit Control

WE turn now to the domestic control of credit. At several points in the discussion of quantitative control, this method was demonstrated to be inadequate and incomplete and evidence was given that greater resort to qualitative methods is necessary. The following chapters will be devoted to a study of the lines along which qualitative analysis and control may be expected to proceed.

1. Controlling Prices at the Turning Points of the Index

In the study of the major criterion itself—the price-level—the first difficulty is encountered. The fact that the price-level is an average is sufficient evidence that it can be influenced by the movement of a single price or a group of prices related to the same industry. Furthermore, in the course of our discussion doubt has been raised as to the validity of the “objective mean variation concept” of prices as a measure of the value of money. For this statistical method of determining the “value of money” to hold true, the variations of the individual items in the averaged data must be independent in their movements. But they are not. The increase in any price will become the source of increases in others, for the increased amount spent for this commodity does not mean that less must be spent for others. Increasing prices mean increased potential credit and hence increased purchases by business men. The increased bank credit is a secondary effect of the increased business credit. Recognition of this leads to the first deviation from the straight quantitative technique for restrictive measures must

be taken when a few prices have started to rise. This leads to the suggestion that specific control of credit is called for, rather than a general restriction.¹

In the same way, the price level presents difficult problems when it has started to decline. A review of the conditions existing at such a time leads to the conclusion that the quantitative approach presents the paradox of correcting a condition caused by an over-expansion of credit, by still further expansion. The fetish of the mathematical stability of the price-level leads to the necessity of either preventing the declining prices from continuing their course or of offsetting this decline by increases in other prices.

The expansion of credit for the purpose of increasing prices is balked by an inherent difference in the nature of increasing and decreasing prices. Whereas a rise in prices can be controlled by curtailing bank credit in the lines affected, thus reducing the amount bought by business men, there is no counterpart of this in controlling a decline. There is no way by which purchasing power can be put into the hands of those who buy the goods. The decline in prices reduces the credit standing of the business men involved and there is no inducement for them to buy larger quantities, unless consumption demand can be stimulated. But there is no way of doing this. For even if more bank credit is

¹ Cf., "And, indeed, I am of the opinion that, in the near future, monetary theory will not only reject the explanation in terms of a direct relation between money and the price level, but will even throw overboard the concept of a general price level and substitute for it investigations into the causes of the changes of relative prices and their effects on production." Hayek, *Prices and Production*, pp. 25, 26.

"It should be noted, also, that there is nothing about a stabilization policy which would prevent the regulative body putting much of the pressure upon the wheat . . . and reducing it on cotton. It seems reasonable to believe that pressure may be placed at the points desired under a policy of stabilization just as it has done at present." Spahr, *Federal Reserve Banks and the Control of Credit*, p. 10.

put into the hands of consumers, say by way of stimulating investment relative to savings, there is no assurance that they will spend the increased income for the goods the prices of which are falling.

The unfortunate result of this is that the use of bank credit is often perverted. That is, those extending such relief, instead of putting into the hands of buyers the increased credit, which would be necessary to stimulate the demand for goods, put it into the hands of the sellers. Thus there are put forward various valorization schemes by which the producers of unconsumed goods are extended more credit in order to keep their products off the market. The hope, either expressed or implied, is that somehow and sometime the former prices will prevail and thus justify the credit. But if there is a real alteration in the relative values of goods, as determined by consumption, this will never occur and that which was thought to be an extension of credit becomes a recognized loss. In the meantime the situation has been made worse, for instead of being curtailed, production has been stimulated.

The alternative course is to increase the prices of other goods. This at least has the merit of recognizing the necessity of maintaining relative values in the proportion determined by free choice in consumption. But it also admits the necessity of an ever-increasing price level, for once prices have increased they must not be allowed to decrease, and in order to prevent the level of prices from falling prices of some goods must be raised in order to place them in proper relation to the prices of other goods, which conditions of supply and demand are causing to fall. While approving the general idea that the banks ought to keep the price level stable, the members of the MacMillan Committee merely throw up their hands when the sound-

ness of such a program is presented to them.² An attempt to deal with this problem quantitatively provides no explanation as to which of the possibilities is likely to follow, for all that is wanted is an increase in the price level, and this is to be brought about by merely increasing the total quantity of bank credit. But the problem of relative values cannot be ignored. If the expansion of credit should either increase the prices of those goods which are falling, or hold them constant, then other prices must rise. And if this is brought about by lending more to those who have the unconsumed goods, a greater expansion of credit must be made than would at first appear necessary, for a large part of it will be needed just to "carry" the excess production until the credit eventually "seeps" through to the buyers. Furthermore, there is no assurance that the increased incomes will be spent in such a way as to bring about the desired price relationships.³

2. Adoption of Qualitative Instruments

In the second place, there has also been an infiltration of qualitative ideas in the field of the technique of control. The quantitative approach too greatly simplifies the problem of central banking and shows no relationship between other banking functions and credit control. It does not discuss the basis upon which the central bank should expand its liabilities, but merely suggests that at times it should increase them and at other times decrease them. It gives no indication that there is a problem involved in the theory of central banking as such. Discount policy is narrowly viewed

² "The general price level, for instance, might fall because of a heavy fall in the price of one commodity, e. g. wheat or cotton. Are Central Banks to attempt to counteract this influence by a general rise in other prices? We do not think it necessary to give a dogmatic answer to such questions." *MacMillan Report*, p. 129.

³ See Robertson, *Banking Policy and the Price Level*, pp. 29-33.

in terms of interest rate and open market operations guided by some single criterion. Nothing is said of discount policy, in terms of the assets to be acquired, as the subject is presented by Beckhart, for example.⁴

The difficulty with which those using the quantitative approach are confronted, in explaining a contraction of credit on a mechanistic basis through the influence of interest rates, leads to the recognition of the necessity for qualitative action on the part of member banks. Following an increase in the central bank rate, it is necessary to find a reason why the member banks should increase their rates. But even supposing that they did, the more difficult problem arises as to why this increase should deter borrowers. The answer given, as we have seen, is that because of traditions, moral suasion, or the psychological reactions of the bankers, the member banks follow the lead of the central bank. It is necessary, therefore, that they scrutinize applications more carefully and discriminate. But no basis for discrimination is offered.⁵

In addition to closer scrutiny and discrimination, the idea

⁴ *Discount Policy of the Federal Reserve System*, p. 2. "It includes the type of paper eligible for discount, the type of collateral which a central bank will accept against advances, and the various methods it employs to protect its gold reserves."

Hawtrey in *The Art of Central Banking* also recognizes that, "In fact if the *character* of the assets held by the central bank is sufficiently restricted, the effect is much the same as if their *volume* were limited," p. 198. (Italics his.)

⁵ See R. G. Hawtrey: "Short of an absolute refusal to lend, there is much that bankers can do to restrict credit. They can apply a more severe standard to the security offered; they can reduce the maximum period for which they are willing to lend; they can discriminate as to the purpose for which the borrower wants the loan. A banker knows much of the affairs of his customers, and can often practically veto hazardous or unnecessary enterprises, or can, at any rate, exercise much influence in advising caution." *Currency and Credit*, pp. 23-24.

of "rationing" has also been proposed.⁶ Care should be taken, however to avoid the assumption that the banks have a fixed amount of credit which they "ration" between industries, as does a mess sergeant when supplies are low. It should imply that industries, like individuals, may have different credit standings.

3. The Demand for Gold

Analysis of the causes of gold movements provides the key to the approach to credit control. Hawtrey says that, "on the other hand, if credit is adequately controlled the drain of gold can be stopped. . . ."⁷ This is usually taken to mean that if a proper reserve percentage is maintained, or if an excessive amount of credit is not extended, the gold reserve can be maintained. Conversely, gold has been thought of as a controller of credit. Drain of gold (or currency), or a reduction of the reserve percentage below a "safe" figure, has been recognized as a limitation to the expansion of credit. But these controls operate slowly.⁸

⁶ Cf., "The most obvious weapon at the disposal of the banking-system for mitigating the rise in the price-level is of course the manipulation of its money rates of interest. . . . The second weapon at the disposal of the banking-system is the sale of Government securities. . . . The third weapon at the disposal of the banking-system is the direct limitation by rationing or other means, of the quantity of new loans." Robertson, *op. cit.*, pp. 76-78.

It would seem that the "most obvious weapon at the disposal of the banking system" would be the ones used every day, namely, refusal, reduction of the amount applied for, and convincing borrowers of the inadvisability of the loans requested.

"Extensions of credit, on the part of a central bank, may be restricted either by raising the discount rate, and thus eliminating the marginal borrower . . . or by rationing credit in accordance with a predetermined scheme." Beckhart, *op. cit.*, p. 13.

⁷ *Currency and Credit*, p. 76.

⁸ "A statutory regulation of reserves, such as is established in the United States, does little to promote sound banking. Apart from the obvious criticism that just at the time when the banks ought to be using

Before they become effective, gold movements are likely to occur as the result of the breakdown of clearance. Attention must therefore be given to the way in which the superstructure of bank credit is built up with the aim of maintaining clearance and reducing the demand for gold. The significance of maintaining reserves thus becomes of importance, not only in itself as a "protection" to deposits, but in the indication which it gives that what is being produced is being exchanged, which is the fundamental purpose of economic activity.

The proper study of credit thus involves a study of exchange, relative prices, the balance of production, and the amount of debt incurred for various purposes in addition to the total quantity of credit, price averages, and production indexes.⁹ It is not sufficient merely to study total consumption in relation to total production or the flow of goods as measured, for example, by a general index such as carloadings. These totals must be broken down so as to show the

their reserves, they cannot pay them out without reducing them below the legal proportion, there is the serious weakness in the system that it does nothing to prevent that inflation of credit which leads to the depletion of the reserves. Either an individual bank or the banking community as a whole remains free to set in motion forces which must in time reduce the reserves below the proportion, and when this inevitable result comes about, the effect of the legal limitation is only to intensify the difficulty by stopping fresh business." *Hawtrey, op. cit.*, p. 209.

"If the foregoing interpretation is correct, the trade cycle is a credit cycle, and is traceable to a defect in the gold standard as a regulator of credit. Conformity to the gold standard sooner or later keeps a credit movement within bounds, but *not soon enough*. The credit cycle occurs because it takes years for the restrictive influence of gold to make itself felt." *Hawtrey, The Gold Standard in Theory and Practice*, p. 82. (Italics his.)

⁹ *Cf.*, "The gold movements [1921] could be further analyzed, however, and in such a way as to make recent developments in trade and production the ultimate and decisive considerations." *Reed, Federal Reserve Policy, 1921-1930*, p. 13.

consumption of individual commodities or, more accurately, the relative consumption and production of various goods and the prices at which they are selling. Furthermore, the prices at which a given commodity is selling in various stages of production become of paramount importance. Since the process of production is carried on under a system of division of labor, and the chain of manufacturers and traders involved from the extraction of raw materials to the final consumption of a commodity may be quite long, there are many opportunities for important changes in demand and relative values to occur between the beginning and the end of the process.

The theory of banking is thus a part of the theory of exchange, as would be supposed from the general agreement that credit instruments are media of exchange. Of this the quantitative approach says nothing. It considers money and credit independently of exchange and studies the relation between the total volume of the media of exchange and the total volume of goods in order to determine prices. The qualitative approach, on the other hand, studies the relations between goods and goods, prices and prices. It views credit as related to production in the sense that the production must result in goods which, when subjected to the test of exchange, will prove to have the value stated in the extension of the credit. If they do not have such value, then clearance will break down and the bank will lose its reserves, or its gold. Thus the loss of gold or reserves is the sign that credit has been improperly extended. The study of credit becomes a study of *the conditions under which credit may be granted*. The control of bank credit becomes a problem of deciding to what extent debts contracted for the purpose of engaging in a certain enterprise may be made the basis for a generally acceptable medium of exchange.

4. The Attitude of Bankers

Thirdly the practical banker has long realized the qualitative nature of credit. He would never think of merely increasing the amount of his liabilities without at the same time taking into consideration how the additional credit was to be employed and who was to employ it.¹⁰ Why this aspect should be overlooked in the consideration of the aggregate of credit when it is not an individual case is not clear. Recently the federal reserve banks have indicated the recognition of the need for qualitative methods. In the hearings before a Subcommittee of the United States Senate the use of credit tests was discussed as well as the alteration of acceptability requirements, and the significance of the condition of the applying bank.¹¹

Inflation

The qualitative view also leads to a clearer understanding of how expanding bank credit increases prices. This is usually explained on the basis that bank credit expands faster than production. It is not that credit expands faster than production, but that it expands faster than *values*, which causes the increase in prices. That is, although the total quantity of credit is expanding at the same rate as production, if some of the goods produced do not eventually

¹⁰ "A clothing merchant proposes to set up in business. He expects to carry a stock of goods worth on the average about \$25,000. If he without capital of his own, should make application for a bank loan of that amount, the application would in all but the most exceptional cases be refused, because the banker, who *handles chiefly the funds of others*, cannot advisedly place those funds where so large a risk would obtain." Phillips, *Bank Credit*, pp. 4-5 (*italics mine*).

¹¹ *Hearings on S. Res. 71*, 71st Congress, Third Session, pt. 6, answers to questionnaire 7, pp. 708-711.

See also, Willis and Bogen, *Investment Banking* (New York, 1929), pp. 290-92, for a discussion of the efforts of the federal reserve banks to eliminate speculative paper from bank portfolios by the use of differential interest rates.

command as much bank credit when they are sold as was estimated when they were produced, there is somewhere in the community an amount of purchasing power, earned by some of the factors of production, which is devoted to the purchase of other goods, thus increasing their price. Inflation is seen to be a process of extending credit in excess of the amount warranted by the ultimate exchange value of the goods as determined by the community in their valuation of the goods in consumption. It would be quite possible, therefore, for a critical situation to develop even though credit and production were keeping pace. The producers of goods which did not command the expected price would have to curtail production. The workmen thus left unemployed would have to reduce consumption and thus upset the balance of production in other industries. If the loss to the first producers mentioned above was so great as to involve the banks, they would pass on the contraction to others through the curtailment of their activities in other directions. If they failed, their losses would be transmitted to depositors who would have to alter their demand schedules. Thus banking, in order to avoid inflation must continually guard against recognizing values in the extension of credit which do not materialize when the goods are subjected to the test of sales. Most dangerous of all is the further extension of credit to carry customers who are unable to sell at the prices needed for profit.

Deflation

The obvious way to avoid deflation is to avoid inflation. The quantitative view being concerned only with the prevention of an increase in prices does not examine the causes of the increase. No reference is made to the basis on which credit is expanding. Quantitative control is expected to correct a decline in prices by a further expansion of credit which, viewed in the most favorable light, depends on a long

and roundabout process of "seepage" of credit from the points at which it is introduced either to the goods which are declining in price or to others. Since the problem involved is the readjustment of relative prices, the only conclusion is that the basis of valuation must be changed. For to raise the prices which are falling, implies a new basis of valuation. The only other possible alternative, namely, to assume that the generally increased incomes will alter the relative demands in such a way that those prices which are falling will stop and those which are not falling will remain stationary, is based on too optimistic a view to be of use.

Credit Theory and the Theory of Value and Exchange

Credit theory is thus seen to be a part of the theory of value and exchange and industrial equilibrium. But it must not be assumed that the banks can maintain industrial equilibrium. Goods may be produced which do not bring the expected prices and losses will be incurred. But these losses should be sustained by the entrepreneur and should involve the banks as little as possible. The banks should assure themselves that the proprietary equity of business is large enough to bear the burden of these losses. Their function is to study exchange and the extent to which they are warranted in creating media of exchange for the facilitation of the process. They must study the conditions under which credit is to be granted and the amount which may safely be added to their liabilities and yet permit clearance to take place, for as long as clearance is taking place, exchange is also. The nearer they can approach to the maintenance of perfect clearance, the less important becomes their gold reserve, because it is unused. And when banking is so managed that the gold reserves are never used, they can be disregarded and we shall then have a truly "managed currency".

CHAPTER X

CREDIT THEORY AND CREDIT ANALYSIS

Goods and Credit

A review of the theory of credit indicates that, "there must be an exchangeable something from which a credit derives, and any medium representative of such credit can only be valuable while that something exists, and is available."¹ Credit must be viewed as the representative of exchange values stated in terms of the money of account. It must, therefore, represent goods intended for exchange. If the total volume of credit is to be thus representative, the safest practical course to pursue is to relate, as nearly as possible, the individual extensions to the goods involved. In extending credit the bank constantly estimates such exchange values and establishes them on its books for the use of the community in exchanging the goods produced under a system of subdivided labor. Since bank credit is redeemable in gold the extension of credit guarantees the values. They must, therefore, be estimated as nearly correctly, as possible. Thus if the analysis is correctly made, there will be no need for gold—or reserves—while the more incorrect the estimates, the more reserves will be required.² The banks must also make sure that when the goods on which the credit is based are finally acquired for consumption or ownership,

¹ Goodliffe, *Credit and Currency*, p. 2.

² Contrast this with the view implied in the following: ". . . the leading safeguard against insufficiency of cash lies in a large cash reserve." Fisher, *The Purchasing Power of Money*, p. 43.

their liability ceases.³ A review of the technique of credit analysis used by banks, indicates that it lays a foundation for the development of methods of credit control in its broader aspects.

Contrasted with this is the widely held view that the banks create or provide credit, independently of the borrower. That is, it is thought that they provide a medium of exchange, usually assumed to be based on their reserves, for which borrowers compete. The control of credit thus becomes a problem of adjusting the total quantity of credit to the quantity of goods. The view taken here is that the borrower already has credit by virtue of the possession of certain goods. By basing the individual extensions of credit on the proper kinds of goods, the total volume of credit becomes of secondary importance. However, being so based, it is more properly related to the total volume of goods for it becomes the representative of exchange values individually analyzed. This is the fundamental distinction between the quantitative and qualitative approaches.

Dependence of Bank Liabilities on Bank Assets

The significance of this for the banker is that he is required to reverse his view from the concept of lending the "funds" of his depositors to the concept of establishing liabilities through the acquisition of assets. He must come to regard each extension of credit as an addition to the fund of unexercised claims to goods held by the community. He must constantly bear in mind the method by which he will meet this liability. If the credit system is to be maintained without strain, this must come about through the acquisition

³ Cf., "The genius of credit is its eventual liquidation. To protect this liquidation it must never be used beyond the reasonable risks of business. When the assets of a business or the community on which the credit is based are in danger of not realizing sufficient to redeem the credit, then there is credit inflation." Tregoe, *op. cit.*, p. 42.

by his debtors of a sufficient amount of the credit fund, through the sale of goods, to liquidate the bank's liability; ⁴ such liability must be used by the community to command goods—not gold.

It is true that the individual banker who is gaining deposits, say by increasing the number of his depositors who are not borrowers, is apparently able to make loans *because he has deposits*. But this explanation can not hold for the entire banking system. The banks as a whole have deposits *because they make loans*. The growth of deposits may indicate that the volume of exchanges has grown; that is, that the volume of goods produced has increased, and that the volume of goods consumed has also increased, and that therefore, the value of goods, in existence at any one time represented by bank credit is larger. But it might also indicate that the amount of goods produced, relative to the amount consumed, has increased. The volume of unexercised claims to goods—bank credit—would also increase. Thus, while the amount of goods in existence is larger, and the volume of bank credit is also larger, the condition of business is not the same as in the first instance. In the latter case, merely the amount of goods has increased, while in the former, the *flow* has also increased. Therefore, an increase in the volume of credit must be interpreted in the light of the flow of goods, rather than in that of the amount produced or in existence.

An increase in the volume of bank deposits, then, does

⁴“No more of this currency can be issued safely than the banks can find not merely safe men to borrow, but men who have something with which they can actually redeem it from the hands of the public, and restore it to the issuers.

“If the circulation is not kept active by the demand of the debtors, and if they do not return it at as rapid a rate as that at which it is issued, payment will be demanded of the banks at a rate with which they cannot possibly comply.” Colwell, *op. cit.*, introduction, p. 11.

not mean that the bankers have more "funds" to lend. It may mean that, as a group, they have already loaned too much. For if their loans have led to an increase in the volume of goods which are neither consumed nor selected for ownership, the incomes earned in their production will accumulate in the form of bank credit or unexercised claims to goods. If these deposits are then considered as "money" which the banks can make available for investment in fixed capital or real estate, such investments will be subject to depreciation in value. For since the value of capital goods is determined by earnings from the sale of consumption goods, and since production is already running ahead of consumption, when the goods resulting from the new investment come to market the maladjustment will be of the second order of magnitude. This is the same problem which was treated above in the discussion of the conditions of the growth of bank deposits accompanied by a growth of investment. Therefore, if the bank deposits or "money" which the community has is to remain stable in value, the banks must assume the responsibility of determining the existence of these values before adding to the community's "money" accumulations. Thus inflation of bank credit is avoided. Inflation is a result of the overestimation of values in the extension of credit. The effect is a growth in the unconsumed goods of the community or stock of finished products. These goods prove not to have the values at which they were estimated. The incomes earned in their production are not equal to the amounts spent for them. Thus there is a growth of bank deposits. In the second stage, when the volume of goods becomes still larger, and prices fall, the quantitative method of control would suggest that there is an insufficiency of "money" and that the banks should extend still more credit.

The total volume of bank deposits must, therefore, be

viewed as a "flux". The production of values is the basis upon which it may be increased. The consumption of goods should lead to its reduction. If production and consumption are equal and unchanging in volume the total amount of credit remains the same. This relationship between the total volume of goods and credit has led to the view, which is rather widely held, that the total quantity of credit may be thought of as consisting of units or counters, like fiat money, which are passed from hand to hand, and while performing the function of a medium of exchange, themselves remain always the same.⁵ But such a view gives no test of the representativeness of bank credit as the monetary equivalent of exchange values. To determine its representativeness bank credit must be constantly liquidated and renewed and the goods sold as well as produced. The validity of the total volume of credit can be maintained only by building up such a total from well tested extensions. The credit should not be allowed to remain in existence longer than the ordinary processes of marketing require for the disposal of the goods. Thus, although a constant total volume of credit may exist, it will be continually based on new loans, constant substitution of new portfolios for old. The banker's view of this should be that his extensions of credit are adding to the total volume of credit, rather than that he is lending something which is already in existence—that is to say he must learn to think *from assets to liabilities*, rather than *from liabilities to assets*.

Credit Theory and Credit Extension

The proper control of credit should begin with and rest on the extension of credit, the aim being to keep the volume of credit as nearly as possible equal to the exchange value

⁵ Consider for example the M'V' of Fisher's equation of exchange and other similar statements.

of the goods which industrial, commercial, and agricultural activities are making available for sale. The more accurately individual extensions are made, the more nearly representative the aggregate will be. There are many indications of this view of credit in the literature of the subject.⁶ Conversely, the loss of reserves by a bank or banking system must be viewed as indicative of improperly extended credit. It then becomes necessary for the bankers to examine their portfolios to determine what part of their business is causing the drain. It will be found in those loans which are not being repaid, that is, loans which have to be renewed while the borrowers are holding unsalable goods, usually in the expectation that conditions will soon improve and they will be able to sell the goods at the anticipated price. The only way in which these values can be tested is through sale of the goods, and borrowers should be forced to face the real situation by such a test. This should preferably be done

⁶ For example: ". . . I wish to point out . . . the inaccuracy of the statement that all credit rests on a gold basis. . . . But commonly, in this connection, gold functions, not as the value basis lying behind the credit instrument, the existence of which justifies the extension of the credit, but rather as the *standard of deferred payments*, by means of which the credit instrument may be made definite. The real basis of the value of a mortgage is not a particular sum of gold, but rather the value of the farm, expressed in terms of gold. The basis of a bill of exchange is not a particular sum of gold, but rather is the value of the goods which changed hands when the bill of exchange was drawn, supplemented by the other possessions of drawer, drawee, and the endorsers through whose hands it has gone. Even a note unsecured by a mortgage, or not given in payment for a particular purchase, is based, in general, on the value of the general property of the man who gives it, and on the value of his anticipated income." Anderson, *The Value of Money*, pp. 326-327 (italics his).

"If we continue to follow up the ultimate basis of the bank's liabilities we shall find it in the visible tangible wealth of the world." Fisher, *op. cit.*, p. 41.

"The notes issued by banks, in discount of commercial paper, must correspond as the paper discounted does to the value of the goods for which it was given." Colwell, *op. cit.*, p. 235.

before their commitment becomes so large as to be totally ruinous if their estimates are wrong. Instead, then, of a general contraction, pressure should be placed on those borrowers and those industries which are causing the difficulty. It is of course, not necessary to contract in all cases when reserves are moving. The movement may be temporary, due to seasons or similar understandable causes, and the bank or banking group may be tided over by inter-bank borrowing or rediscounting at the central bank, thus evening out the flow of goods and reserves for short periods. However, experience and custom should not be relied upon, for conditions constantly change and it is the unexpected changes which are the most dangerous. Only careful analysis and interpretation of the character of banking portfolios can point the way. And one of the chief reasons why the credit structure periodically becomes so hopelessly upset is that such information in the aggregate is sadly lacking.

There are many elements in the banker's attitude toward the extension of *individual* loans, which emphasize the necessity of relating each grant of credit to the value of specific goods. He does not always recognize the same necessity when viewing credit in the aggregate. This oversight grows out of a lack of appreciation of his function of providing a medium for facilitating the exchange of the goods on which the credit is based. He still considers that he is lending the "money" which the depositors have entrusted to him. The accumulation of bank credit, or unexercised claims to goods, has not the proper significance for him. These "funds" are, therefore, devoted to the purchase of securities, or loaned to others for that purpose, as though they represented some inherent value. It is not recognized that bank credit is being written up faster than goods are being consumed and that, therefore, the values of the goods upon which it is based, will ultimately prove to be less than their costs of production.

But even though the extension of credit is considered to be nothing but the relending of money deposited in the bank, practice and experience have led to the development of certain tests and requirements. These tests, which borrowers must meet, coincide with the view that the bank is estimating exchange values and establishing them upon its books to be available as purchasing power while the goods are in the processes of manufacture and marketing.⁷

One evidence of the close dependence of credit on goods, which is insisted upon, is found in the types of loans which are made. Broadly, loans and discounts may be classified as secured and unsecured. Those which particularly illustrate the view here outlined are the loans secured in one way or another by commodities.

This security may be obtained in various ways. Bills of exchange with shipping documents attached, trust receipts, and warehouse receipts are the most common. To the banker such security is a method of making the loan "safe"; it provides him with something by means of which he can "get his money back" in case the borrower is unable to pay. To the theorist, who is attempting to understand the mechanism of a complicated system of exchange, it seems that the collateral is a method of relating the credit to the underlying goods whose values it represents. The production of the goods has created exchange value, and the extension of bank credit has made this purchasing power available to the producer in a generalized form. The test of the

⁷ The technique and problems here reviewed are given in detail in such books as:

Wall and Duning, *Ratio Analysis of Financial Statements*, New York, 1928.

Prendergast and Steiner, *Credit and Its Uses*, New York, 1931.

Schluter, W. C., *Credit Analysis*, New York, 1925.

Schwulst, E. B., *The Extension of Bank Credit*, New York, 1927.

Guthmann, H. G., *The Analysis of Financial Statements*, New York, 1925.

correctness of the estimate of the value of the goods is found in the ability of the goods to command from the community an equal or larger amount of bank credit than was extended to the borrower. If they do, then the debt to the bank can be liquidated by the sale of the goods. If they do not, then the bank must make good the value in another generally acceptable value—gold. This is true whether the bank must ultimately sell the goods itself or whether the borrower does so. If the value has been overestimated, there has been inflation; if underestimated, the business community is not using all of the potential purchasing power represented by the goods produced. This is not the same as deflation which is the process of restoring representatives of value to their true value. Deflation is always preceded by inflation. Changing the basis of valuation in either direction will have effects similar to inflation and deflation in that prices will tend either to rise or to fall, depending on the direction in which the change is taking place. For example, if goods which have previously been made the basis of credit extension at 50% of their estimated value are admitted to exchange by the banks at 75% of this value, there will be an all around increase in the available purchasing power. Or if goods which have heretofore been excluded from exchange are suddenly made the basis of credit (introduction of installment selling, for example) there is an all-around increase in purchasing power. If this leads to the expansion of fixed capital, on the assumption of continuing increases in demand, real inflation may follow. And conversely, decreasing the percentage of the estimated value which will be loaned on goods or excluding goods which have, heretofore, been admitted to exchange through the extension of bank credit, will lead to an all around decrease in the amount of available purchasing power and to a lower price level. If the decline in sales is interpreted as the permanent rate of

decrease this leads to a downward revision of all values and a real deflation will follow.

At the risk of tedious repetition, it should be pointed out again that the admission of goods to exchange by permitting their use as security for the extension of credit applies only to goods intended for exchange. When lands and buildings are so treated real inflation is taking place, for as pointed out above, there is an addition to the volume of bank credit unaccompanied by an equal increase in exchange values. If a man owning a building, or land, is permitted to offer it as the basis for a grant of bank credit, thus enabling him to make its value available as purchasing power he is in effect retaining ownership and use of the property and spending it too. When he acquired these assets, he devoted a part of his previously unexercised right to goods to their ownership. If he now retains that ownership and spends the value (or whatever percentage the bank allows) too, there has been added to the total of bank credit an artificial purchasing power which the borrower does not have. If he wishes to exert part of the value of these goods as purchasing power for others, someone else must lend him a part of their unspent purchasing power in order that the value of the exchangeable goods in the market be kept equal to the bank deposit subject to check. The requirements which borrowers must meet indicate that "unsecured" loans, no less than "secured" loans, are based upon goods intended for exchange.

Much discussion of the conditions under which credit may be granted refers to the character of the borrower. This is extremely important, and the investigation of this element should not be relaxed. There have always been and apparently will continue to be business men whose word is not as good as their bond. Honesty has not yet become so general that men will not have to be sued for their just debts. But

willingness to pay just debts is not sufficient to assure the bank that the debts will be paid. A man might be ever so honest and yet be unable to pay. It is from the point of view of the ability of the borrower to meet his obligations, that the bank must primarily view its loans. Again we must point out that while the banker considers the matter merely from the point of view of "getting his money back", for the economist there is a broader significance to the investigation centering about the question of the means by which the debt is to be liquidated.

When character alone is considered the assumption apparently is that it indicates not only honesty, but business ability, the ability so to manage the enterprise as to make it profitable. Consideration of character assumes that the borrower is a sufficient judge of his business to know whether or not he will be able to repay at the appointed time, and that he will be able to control conditions to such an extent that he will be able to do so.

Statement Analysis and the Theory of Credit

Some bankers, however, are coming to realize that they too can have a part in the investigation of these conditions.⁸ Interestingly enough from our point of view, the first question to which bankers have directed their attention was as

⁸ "To the extent to which the modern method is adopted, the granting of credit ceases to be a highly personal transaction, depending upon the relationship between the two parties and subject to psychological attractions and prejudices. Instead, it tends to become a routine process, by which an individual automatically receives credit when he shows himself to be the owner of certain kinds of property, and can demonstrate that he desires to use the credit in some acceptable economic undertaking. To a much greater extent than was previously the case, we can say that credit tends to be based upon economic goods; and parenthetically it may be suggested that this is due, in part at least, to a raising of the general standard of business ethics, which has made a close study of character less important than it was half a century ago." James, *The Economics of Money, Credit and Banking*, p. 113.

to whether the borrower was in possession of goods in an amount sufficient to meet the debt from the proceeds of sale. Furthermore, they considered only certain kinds of goods namely, current assets, or those goods which were intended for sale. This investigation found expression in the current ratio requirement (current assets divided by current liabilities), which has become practically standardized as a part of the information required concerning a prospective borrower. By insisting that the borrower has, say twice as many current assets as liabilities after the loan has been made, the bank is assuring itself that the applicant has exchangeable goods or the promises of his customers to pay for such goods as have already been sold.⁹ It is certifying that the borrower has exchange value or purchasing power, the amount of which the bank estimates and establishes in generalized form on its books as its own liability.

But the mere possession of physical assets is insufficient proof that the owner is entitled to a stated amount of credit, or that he has by virtue of such possession any given amount of purchasing power. These goods must be interpreted in terms of exchange or sale value. Current market prices are only approximate indications. The only sure test is actual sale at that price. The bank is thus always faced with the risk of incorrectly estimating the exchange value, and of subjecting itself to the possibility of having to make up errors out of its reserve.

The degree of risk is, however, to some extent measurable. Accounts and notes receivable in the hands of the applicant represent goods which have already been subjected to the test of sale although payment has not yet been received. There is a contract to pay a definite sum of money. The

⁹ Obviously this ratio will change from industry to industry depending upon the salability of the goods involved. For a full discussion of this point see Wall and Duning.

goods have to that extent been valued and expressed in terms of the money of account. But, before the purchaser can meet his obligation he must sell the goods. If the customer is a consumer he has purchased the goods with future income which must be earned before the conditions of the sale are complete. In terms of the theory of value, he has had a sufficient desire for the goods to make him willing to pay the stated price, provided he has the money. But he has yet to get the money, so that only half the requirements of real demand are met. Thus while the credit extended by the bank may be based on accounts receivable, the degree of risk involved will depend on the remoteness of the borrower from the consumer.

Looking backward from sales, the degree of risk increases with the remoteness of the goods from a salable condition, accounts receivable being the first degree. The second is the stage of salable inventory. This has yet to be subjected to the market test. During the time required to sell the inventory, there are many possibilities of changing market conditions. The third degree of risk is represented by goods which are in the process of manufacture or the raw material stage, for the time required to bring them to the market is still longer. Finally, there is the plant and equipment or fixed capital, the value of which will depend on the production of salable goods. These are so far removed from the market test as to be unsatisfactory as a basis for the extension of bank credit. Further objections are discussed below (p. 291).

Thus the mere confirmation of the possession of goods by inspection of the borrower's statement is insufficient to warrant the bank in creating a medium of exchange. Credit analysts have developed other tests for the ascertainment of the degree of risk involved in establishing values in the form of bank credit as determined by the factors mentioned above.

Besides the ratio of the current assets to current liabilities, the ratio of the fixed assets to the net worth of the enterprise is used to determine whether the net worth is large enough to provide all of the capital required. When it has been established that the basis of the bank credit will be the current assets, which are unencumbered by debt, these are tested in various ways to determine their salability. One of the more common tests is to compare the proportion of the current assets, consisting of inventory, with accounts receivable. The nature of the inventory, consisting of finished goods ready for sale, goods in the process of manufacture, or raw materials, is also recognized as important.¹⁰ Furthermore, the salability of the merchandise is tested by comparison of the current assets and their major components, accounts receivable and inventory, with sales.

There is an additional significance in these last tests when they are viewed in the light of credit theory. Since the extension of bank credit makes the purchasing power of the goods available to the owner, in anticipation of their ultimate sale and payment, there has been added to the volume of the medium of exchange an amount equal to the loan for the period of the selling process. This should be withdrawn when the goods have reached their ultimate destination in consumption or ownership.¹¹ If it is not, credit has been inflated. Comparison of the receivables and the inventory with the sales provides an approximate test of the time

¹⁰ For a discussion of the analysis of inventory, see Wall and Duning.

¹¹ Cf. the following passage from Colwell:

"The distribution of trade is governed by the order of consumption. The time given upon sales should be controlled by the same rule; credits should not be prolonged for a year, but should be governed by the progress of consumption. That which is consumed should be paid for, and that which cannot be consumed should not be represented by paper in the processes of the credit system, in any of its agencies." *The Ways and Means of Payment*, pp. 496-497.

required for sale and collection. Other tests, as well as a study of trade practices, are used to supplement this.¹² The banking tradition of requiring borrowers to pay off all of their indebtedness to the bank at least once a year also emphasizes the same point.

Thus credit analysis in the United States, while not based on credit theory, has developed in such a way as to restrict the granting of bank credit in the directions which credit theory would indicate. It attempts first of all to determine whether the applicant is in possession of exchangeable goods (or debts of customers who have already agreed to pay for such goods at a stated price) and then applies various tests in order to form a basis for judging the probable exchange value of such goods.

Capital Goods and the Extension of Credit

At root the problem of credit control is the maintenance of the volume of credit in equality with the *value* of exchangeable goods. The successful operation of the credit system depends on the accuracy with which the value of the goods on which the credit is based is gauged. When credit is extended to a larger amount than the exchange value of the goods, inflation occurs. Someone has been enabled to purchase more than the exchange value of the goods which he possesses warrants. If carried out on a broad scale, there will occur a rise in prices. But because some have spent more than the sale of their goods returns to them, there is also a volume of debts which cannot be paid on the basis on which they were contracted. This leads to forced sales of goods, declining prices, failures, unemployment, in short, to a depression. The greater the inflation, the more serious the depression. And the depression cannot be corrected by extending more credit and creating more debts. Incon-

¹² For a thorough discussion of this phase of credit practice see W. H. Steiner, *The Mechanism of Commercial Credit* (New York, 1922).

vertible credit might alleviate the situation, but only by a devaluation of the money of account. But a currency of fluctuating value is the evil which the quantitative control of credit is intended to correct.

The conclusion, therefore, is that the control of credit must aim at preventing inflation, i.e. the extension of credit where it is not economically justified by the exchange values of the goods on which it is based. If inflation can be prevented, no deflation can follow.

The first principle of credit control, then, is that the volume of credit should not increase faster than the aggregate of the value of exchangeable goods. This means that credit should not be extended to any individual who does not have in his possession goods which are exchangeable and which he intends to exchange or sell, and that credit should not be extended except for the acquisition of such goods. The type of goods and the intentions of the borrower are, therefore, of paramount importance. Thus loans on residences, on buildings, lands, etc., are to be excluded.¹⁵ The result of the expansion of bank credit on the basis of such goods as these is to place in the hands of the community an amount of purchasing power in excess of the goods offered for sale, which leads to an increase of prices. In other words, one is enabled by such a bank credit expansion to own his house and spend it too. Likewise, the acquisition of such goods should not be made the basis for expanded bank credit, for ownership should be the result of savings. In either of these cases, more purchasing power is put into the hands of the community than will be returned to the banks by sales and liquidation of the loans.¹⁶ Prices will

¹⁵ Cf., "To remember the difference between a bill of exchange and a mortgage has long been the golden rule of banking." St. Clair, *op. cit.*, p. 152.

¹⁶ This is the problem of clearance between the banks and the public

tend to rise and the transactions themselves offer no explanation of how the debts are to be liquidated.

This is not to say that the *production* of capital goods, when such goods are intended for sale, should not be the basis of bank credit. The production of capital goods, like the production of any other goods, adds to the volume of exchangeable goods in the community and to the total of exchange values, and is, therefore, a proper basis for the expansion of bank credit. These goods are intended for sale by the producers, and when such sale takes place, there will be withdrawn from the community an amount of bank credit equal to their value. *This* should come from savings. The net effect of such a transaction may be summarized in the following sequence: goods produced, bank credit extended—goods sold, bank credit reduced; result, movement of goods from producer to ultimate owner facilitated by the credit system.

1. The Difference between Collateral and Purpose of the Loan

The limitation imposed above on the use of mortgages and securities as the basis for an expansion of bank credit does not exclude their use as *collateral per se*. The collateral offered does not necessarily have a direct relation to the underlying transaction. It does not necessarily indicate the borrower's intention. A dealer in wheat might conceivably offer securities as collateral for bank credit which he intends to use to finance a shipment of wheat. The collateral merely indicates that if the transaction fails, he is

as discussed above. Colwell seems to emphasize this in the following passage: "As the special function of bank currency is to pay debts to the banks, the rule of issue should be not what they can put into circulation, whether deposits or notes, but what they can recall by the payments of their debtors; for if they do not return the notes, the banks can never redeem them." *Op. cit.*, introduction, p. 12.

willing to sell something else to meet the obligation. Such loans, however, invalidate banking statistics, for it is impossible for bankers to determine the condition of credit from an analysis of bank statements if a large volume of such transactions exists. For the sake of commercial bankers and central bankers who find it necessary to know credit conditions, it would be advisable in bank statements to classify loans in such a way as to emphasize their real nature.

2. Lending and Extending Credit

It is also not intended to imply that "borrowing" for the purpose of acquiring capital goods should not be permitted. This is a necessary process in an industrial society. But it should be *true borrowing and lending* and not credit extension. What is loaned is that portion of income which is not devoted to the purchase of consumption goods. It is, therefore, available for the purpose of investment or the acquisition of capital goods. But these goods need not be purchased by the one who has the purchasing power. He may lend this purchasing power to another. This, however, is not the same as the extension of credit. It results in the addition of no new purchasing power and does not disturb the relationship between goods and credit.¹⁵

Investment banks, savings banks, trust companies, etc. perform the service of bringing such borrowers and lenders together on a large scale. This banking activity is usually given due consideration in discussions of banking theory, but often is looked upon as the only function of banking.¹⁶

¹⁵ Cf., "Savings banks do not create deposits when they make loans; they simply invest or lend an amount which does not exceed their capital and surplus and the deposits previously acquired. Other banks do more than this. They lend their credit and are able to do so because they provide substitutes for coined money which are generally acceptable for most purposes." Dunbar, *The Theory and History of Banking*, p. 15.

¹⁶ Cf.: "Being saved and invested, it simply conveys to the Company

The relationship between goods and credit is not disturbed by the introduction of an intermediary step, that of transferring the purchasing power thus acquired as income. But this relationship is disturbed if additional media are created for the purchase of capital goods over and above that extended at the time of their production.

The difficulty in the situation is that any bank finds it confusing to separate its extensions of credit from its loans of deposits. Every bank has some real savings in the form of capital and surplus and undivided profits which may properly be used for the purchase of capital goods. After it has purchased a building and other permanent assets for its own use, there may be something left over which can be loaned to others through the purchase of bonds. It will also have some "real" savings deposits. If the depositors have specifically stated at the time of deposit that it was their intention not to use these "funds" in consumption, they may safely be loaned to others for investment purposes. Unavoidable difficulties may later arise should a large number of the depositors change their minds, which is likely to be the case if the depositors become unemployed and must

a power to purchase engines, rails, and other capital-goods needed to establish and carry on the business. As such it creates no new volume of purchasing power, but only shifts the direction of its application." J. A. Hobson, *Gold, Prices and Wages* (London, 1913), p. 19.

"It is evident, however, that in its simplest form, so far as production is concerned, credit cannot directly increase the actual means of production which are potentially at the service of a nation, but can only transfer the right to use these means from one member of the community to another." Palgrave, *op. cit.*, p. 451.

"Essentially credit seems to be a condition which enables a person to extend his control, as distinct from his ownership, of resources." Lavington, *The English Capital Market*, p. 15.

"It seems strange that there should be any need to point out, that credit being only permission to use the capital of another person, the means of production cannot be increased by it, but only transferred." J. S. Mill, *op. cit.*, vol. ii, p. 50.

live on their savings. But in addition to those deposits which are definitely stated to be savings deposits, there may be a more or less fixed percentage of other deposits which are never withdrawn. What this percentage is can be determined only by the individual bank through an intelligent analysis of its liabilities, based on a study of the turnover of its individual deposits.

Credit control should, therefore, start in the individual bank. There is no need to wait until there is general willingness to submit to central bank action because a rise in prices has become so widespread as to be admitted by all. By keeping each of the banking units in a sound condition, the condition of the whole is kept sound. The central bank can be of assistance by taking into consideration the asset and liability relations in the individual bank when it applies for rediscounts or loans. It is not sufficient that the borrowing bank be able to comply with the technical requirements of the central bank. The former may very well be able to present the proper kind of paper, and yet be in such a condition as to be a menace to the whole banking and industrial system. In other words, the credit position of the bank as well as the particular pieces of paper presented for discount should be taken into consideration.

Thus the first step in credit control is the analysis of the liabilities and assets of the individual bank. Furthermore, such control need not depend on a broad desire, on the part of the individual bank, to assist in maintaining economic equilibrium or the stability of the price level. From its own point of view, the policy of expanding its liabilities on the basis of securities is dangerous. For all extension of credit is an anticipation of value. Obviously, the longer the period of anticipation, the greater the danger that the value will not materialize. Since the value of securities depends on earnings over a long period, their value is subject

to variation. But once these values have been established on the books of the bank by the extension of credit, they must be met in full.¹⁷

From the point of view of the community as a whole, however, there is another very important aspect involved. All extensions of credit result in a temporary increase in the amount of "money" over the amount of goods. When a borrower is granted a "loan" the community has an increment of purchasing power which before did not exist. But the borrower also has in his possession goods intended for sale, or he is engaged in the production or purchase of such goods. When he sells his goods, and repays his debt to the bank, an equivalent amount of purchasing power is subtracted from the total available to the community. The less the time between his borrowing and re-payment, the less will be the effect on prices; and, conversely, the longer the time, the greater the disturbance to prices. Therefore, when bank credit is extended for the purpose of acquiring capital goods for ownership, there is an increase in the demand for goods and in the total amount of credit in the community, which is not liquidated until the borrower offers something to sell. If what is offered for sale is the product of the use of the capital equipment, and not the capital equipment itself, a relatively long time must elapse between the borrowing and the repayment. Thus there will be a tendency for prices to rise at the time of the expansion of credit and to fall when liquidation occurs. Credit, therefore, which

¹⁷ Hawtrey emphasizes this very clearly in the following statement:

"Long-term investments are liable to an indefinite capital depreciation, and consequently the banker needs short-term investments, not merely to help him in maintaining cash payments on demand, but to keep him solvent." *Currency and Credit*, p. 198.

Again: "The vice of such practices is not so much that the investments are for long terms or that the capital is not repayable—indeed in the case of mortgages the capital is repayable—but that the value of the investments themselves is doubtful." *Ibid.*, p. 199.

is extended on the basis of capital goods has an inherent tendency to cause fluctuations in the level of prices.

3. Equilibrium of Savings and Investment

No more definite statement of the need for the policy here outlined could be given than that of Keynes, when he says, "Thus the conditions for the equilibrium of the purchasing power of money require that the banking system should so regulate its rate of lending that the value of Investment is equal to Savings."¹⁸ Others have also pointed out this necessity.¹⁹ "Investment", however, must be interpreted as the *cost* of new investment and not the *value* of investment. All that the banking system can do is to maintain equilibrium between savings and the *cost of investment*.²⁰ The banks should have no part in the risk of inequality between the cost and the value; it is the entrepreneurs' and should be borne by them. And with Keynes' theoretical reasons we are in substantial agreement, as pointed out elsewhere.

It would seem that the most direct way of maintaining equilibrium between savings and the cost of new investment would be to prevent the expansion of bank credit for the purpose of creating capital equipment. Thus the volume of savings and new investment would be left to determine the rate of interest, which is the hypothesis upon which most

¹⁸ *Treatise on Money*, vol. i, p. 152.

¹⁹ "Securities were created and thrown upon the market without intelligent measurement of the public's abilities to absorb them." Tregoe, *op. cit.*, p. 75 [in reference to 1928-29].

Cf., for example, "... demands for capital must, by means of the rates of interest of the banks, be limited to the amounts of funds supplied by current savings, so that no artificial purchasing power, with its accompanying rise in prices, will be created." Cassel, *Money and Foreign Exchange Since 1914*, p. 104.

²⁰ Mr. Hawtrey makes the same criticism of the Savings-Investment concept. See *The Art of Central Banking*, p. 348.

interest theories are built. If the volume of savings increased faster than the rate of investment, the rate of interest would go down, thus stimulating new investment. If this does not follow, the country has moved permanently into a new stage of maturity, as outlined in the discussion of the international aspects of credit control above. If the banking system attempts to stimulate investment by forcing the rate of interest still lower, it is assuming the risk that the investment will not return sufficient earnings to justify itself. And if the value of the investment ultimately turns out to be less than the cost, the banking system is responsible for the resulting depression. It will not only be responsible, but will be holding the frozen assets, which cause so much difficulty in bad times. And the only way to avoid having them in the depression is not to acquire them in an expansion.

Likewise if investments increase at a greater pace than savings this will tend to cause an increase in the rate of interest. If this cannot attract the necessary savings, either at home or from abroad, then the rate of investment must decrease.²¹

Thus the rate of interest is left to be determined by the basic factors of the demand for savings as related to their supply. These factors in turn are determined by the economic conditions of the country and of the world, in so far

²¹ Robertson places responsibility on the banks for providing the necessary "savings". When there is an insufficiency of "lacking", the banks should, by expanding credit, cause "forced lacking". This advice, followed, will lay them open to the dangers pointed out above, namely, the frozen condition and insolvency to which they will be subjected if the investment is uneconomic and a revaluation of the investment becomes necessary. Of course, if they do not need to maintain convertibility, they can valorize their mistakes by expanding the inconvertible credit still more. This, however, will bring about a change in all valuations, with the result of devaluing the money of account. But stability in the value of the money of account is the desideratum of credit control.

as financial markets are worldwide, the rate of investment being determined by the opportunities for profit, and savings by a host of personal considerations.²²

Keynes's interpretation is the reverse of this, namely, that the rate of interest can be determined by the banking system, and will in turn determine the rates of savings and investment. Furthermore, his treatise seems to be concerned primarily with the depression phase and the problem of how to cure it.²³ There is, therefore, great emphasis on the efficacy of increasing credit and lowering the rate of interest. But since it is unbusinesslike for the banks to add to liabilities which they are already unable to meet, this seems to be an attempt to place the blame on the medium of which there is an insufficiency namely, gold. If only the banks were not hampered by the necessity of meeting their obligations in gold, enough "money" could be provided. But experience

²² This is probably at bottom the disagreement which exists between what Edie calls the "school of industrial equilibrium" and the "school of monetary policy", the monetary policy school assuming that the rate of interest can be determined by the banking system, which can in turn determine the rates of saving and investment; the equilibrium school holding that the rate of interest is determined by more fundamental economic factors and cannot be artificially altered by banking policy without destroying the soundness of the debt structure.

Note: "Gradually, the attempt to do so settled down to two main schools of thought, the one a school of industrial equilibrium, the other a school of monetary policy." Edie, *Banks and Prosperity*, p. 4.

²³ ". . . there is much more foundation for the view that it is slumps which may sometimes get out of hand and defy all normal methods of control. . . . My remedy in the event of the obstinate persistence of a slump would consist, therefore, in the purchase of securities by the Central Bank until the long-term market-rate of interest has been brought down to the limiting point. . . . If the Central Bank supplies the member banks with more funds than they can lend at short-term, in the first place the short-term rate of interest will decline towards zero, and in the second place the member banks will soon begin, if only to maintain their profits, to second the efforts of the Central Bank by themselves buying securities." Keynes, *op. cit.*, vol. ii, p. 371.

bids us be cautious, for wherever inconvertible paper or credit has been in use, the rate of interest has increased, not decreased, with the increase of money. Prices also tend to rise, but only because the basis of valuation has been changed. In short, the money of account has been devalued in order to make the payment of debts easier.

Thus we should put the emphasis on controlling inflation. In this way the contraction of debts which cannot be liquidated is avoided. The first and broadest step is the prevention of the expansion of credit on the basis of capital goods and land. If just this much could be done, the banking system would have gone far in doing its share toward the prevention of inflation and subsequent deflation. Misapplications of capital, even on a large scale, might not be avoided and there might still be alternating periods of prosperity and slump. But they would not be so extreme. The depression phase, particularly, would be tempered, for the losses and failures would involve only savings.

CHAPTER XI

CREDIT ANALYSIS AND CREDIT CONTROL

Introduction

WHETHER the problem of credit extension is approached from the bankers' view of "getting his money back" or from the theorist's view of establishing the exchange value of goods in a generally available form, much the same type of analysis is required. Both emphasize the necessity of correctly estimating the sales value of the goods on which the credit is based, the banker's view requiring that the borrower be able to sell, collect, and repay; the theorist's that the purchasing power of the goods be correctly estimated, to prevent inflation and its consequent effects.

Earlier statements of the credit problem phrased it in terms of the three "C's", character, capacity, and capital. If an applicant for a loan had the reputation of honesty, had demonstrated business ability, and had sufficient capital of his own, it was assumed that he would be able to repay at the designated time. By establishing sufficiently high standards, the risk that the bank would not get its money back could be reduced.

But with the growing recognition of the importance of the goods involved in the transaction, there also came the realization that factors other than those immediately related to the borrower and his business affected the risk. The earlier type of analysis is in a sense performed *in vacuo* for it concerns itself only with the individual. It forgets that a borrower, be he individual or corporation, is a part of an economic complex. His ability to make repayment, the all

important condition precedent to granting credit (character or willingness aside), is not determined solely by his own financial condition and business capacity. His fortunes are affected by the prevailing winds and tides of the industry of which he is a part as well as by that nebulous entity, "general business". Over these he has no direct control, except as his actions become a part of the aggregate which gives the net result with which all are faced.

The Four Risks of Credit

This expanded view is exemplified by the restatement of the risks of credit extension given by Messrs. Wall and Duning.¹ The three risks which they emphasize are the personal, the financial, and the general business. The nature of the personal risk has long been understood and fully allowed for. The financial risk is usually analyzed in the manner described in the preceding chapter, and is based primarily on financial statements submitted by the applicant. But, as we have seen, the chief factor on which dependence is placed is the amount of current assets. A larger or smaller proportion of these is inventory. The ability of the borrower to repay will therefore depend ultimately on the price at which this can be sold. The analysis must, therefore, go beyond the individual. The financial analysis can go no farther than the determination of the possession of goods. The estimate of their value must be based on the operations of similar producers or traders as well as on the "general business" situation.²

This part of the credit risk is inadequately expressed by the third of the Wall and Duning risks, namely, "general

¹ *Ratio Analysis of Financial Statements*, p. 14.

² *Cf.*, "Production may be regarded as making society the debtor of the producer. But the ultimate amount of the debt is speculative; it depends on the market for the product." *Hawtreys, Currency and Credit*, p. 191.

business". What is apparently intended can be better expressed as two risks. The first, for want of a better name, might be called "industrial risk". It is the risk which is attached to a whole industry dealing in a particular commodity, say copper. Since the price of copper will depend on the production of all of the producers, as contrasted with the total demand, the true financial condition of any one borrower engaged in the copper industry cannot be estimated from his financial statement alone without reference to the conditions of other similar companies and the market for the product. The degree of the risk is determined by the conditions of supply and demand in the market, by the influence they are having on the growth or diminution of stocks on hand, and ultimately by the tendency of the price to increase or decrease. The limitation to the concept of the "industry risk" is that it goes no farther than relative prices, that is to say, the probability of the price of copper maintaining its relation to other prices, the other prices remaining constant.

The second element in the external risk might, also for want of a better name, retain the designation, "general business risk". This will be determined by the perfection of the adjustment of production and consumption each considered as aggregates. We are thus brought back to the point at which the quantitative school starts and stops. What Keynes says of the necessity for equilibrium between savings and investment is pertinent at this point. The view expressed by Edie, that the volume of credit must not increase faster than production, is also a simple statement of the same requirements. His thesis, however, says nothing of *values*, being based merely on physical volume. The consideration of consumption is entirely omitted; his analysis is, therefore, less adequate than that of Keynes.

The risks involved in extending credit may be summarized

as follows. The borrower may not be honest or may have insufficient business ability. Secondly, even though his honesty and ability has been established, his financial condition might be such that he would be unable to compete with the other units in the business in which he was engaged. Thirdly, though the applicant be in good condition relative to the other companies in the industry, the industry as a whole may be in such a condition as to be unable to maintain its position in relation to other industries. Finally, though the industry be in satisfactory relationship to other industries and apparently able to maintain its position, the whole industrial structure may be out of adjustment with consumption.

This latter condition is usually characterized by rising prices, expansion of bank credit, increased security holdings by banks or loans on securities, and the development of strains on banking reserves. These strains tend to become cumulative as the struggle to maintain reserves spreads, finally leading to a reduction in the willingness of banks to extend credit, forced sales of goods and securities, and declining prices.

Quantitative Control and the General Business Risk

It is the fourth and most general risk with which the quantitative approach is concerned. But we have attempted to show in preceding chapters that the prevention of a depression can best be dealt with qualitatively, i.e. through the control of the character of banking assets. A depression is the result of a cumulative and insidious process of inflation. Some banks, perhaps all banks, have been extending credit on the basis of goods valued at amounts which they are unable to command when brought to the market. There develops gradually an accumulation of "funds" which are deposited in banks, these deposits, which are

assumed by the banks to be "cash", ultimately find their way into the purchase of securities and other long term loans. The bank credit extended on the basis of the goods which do not enter into exchange at the values estimated is available for the purchase of other goods and securities. This causes a tendency for such prices to rise. The banks which made the erroneous extensions of credit find that their clearing balance becomes steadily unfavorable, and strains develop in various areas of the banking structure, spreading from one to another, as the scramble for reserves develops. If, at this point, the central bank provides these reserves by expanding its liabilities, it is trying to valorize the mistakes instead of attempting to correct them. If a banking system has any hope of maintaining the equivalence of exchange, or an equality of trade, this must be avoided.

When quantitative analysis indicates that an expansion of bank credit is leading to an expansion of prices, or of security holdings or loans by the banks, that in short, the cost of new investment is not equal to savings, an effort must be made to determine which line or lines of goods are being made the basis of an excessive amount of credit. These extensions should be restricted, the heaviest pressure being placed on those units which are the worst offenders.

Because the true nature of credit is seldom taken into consideration, little thought is given to credit control until a bad situation develops, until prices have already risen so that the rise is apparent to everyone, until the banks are full of securities and security loans, until, that is, many of their assets are frozen. The remedy is then so unpleasant that no one wants to take it, and nothing is done. The strain finally becomes so great that the financial structure breaks of its own poorly distributed weight. Thus a policy based on the condition of "general business" is likely to defer action too long, and when action is finally taken it comes

in the form of an attempt to deal with the problem quantitatively.

The better policy is one based on the reverse view, that is, the building up of the concept of credit control from the individual to the aggregate. If individual extensions are thoroughly analyzed, if industries are carefully and constantly taken into consideration in credit extensions, it may be that the final stage of general maladjustment can be avoided.

Analysis of Individual Statements

Bankers should first of all develop and improve the analysis of the financial condition of individual borrowers. The trail toward this goal has been well blazed by Alexander Wall. He has devised a procedure for the thorough and uniform treatment of all statements. This systematized analysis produces the information which most bankers realize is needed but which is usually arrived at in a less orderly way. His method has the advantage of bringing to the analyst's attention facts which a more desultory study would be likely to overlook.

In order to take full advantage of this method of analysis, bank credit departments might well make some changes in organization. In the first place expenses could be reduced by having the necessary calculations on all statements which are submitted, made as a matter of routine by employees who are not trained analysts but merely computers. This would require that the statements be first submitted to a trained personnel for a review and classification of items into the proper categories. Supplementary data such as auditors' reports should be consulted in order that the grouped data may represent as nearly as possible the desired categories for subsequent interpretation. After such a study, the grouped data should be submitted to the computers. The results would then be returned to the analyst for interpretation.

The second improvement in departmental organization would tend toward a higher degree of specialization among the analysts. In this way more intelligent interpretations would be made because, by becoming familiar with an industry or a group of related industries, the credit man would know what types of financing are best suited to the company under consideration, what the terms of trade are, and what proportions to expect between the various groups of balance sheet items.

Contrasted with this type of organization, most bank credit departments at the present time rely on the analyst to report on any type of company under consideration. He must pass from one industry to another no matter how widely different may be the conditions under which they operate. Furthermore, since he makes the entire analysis himself and under the stress of high speed work, he does not have time to make all the necessary computations and must rely too largely on inspection of the data. This method does not leave the useful records which orderly and complete computations would, so that when comparisons between companies are wanted, most of the process of inspection must be repeated. A continuous accumulation of such analyzed balance-sheet data will be necessary to the development of a science of credit analysis.

Analysis of the Industrial Risk

This individualized view of credit must be expanded to encompass an industry. For the maintenance of a sound debt-credit structure it is important to know the same facts about an industry that are known about the units of which it is composed. To some extent, there are fragmentary attempts at present to take these into consideration. For some industries there are fairly accurate indexes of sales, inventories, production and prices. This is a good start toward

the ultimate end of estimating the credit position of the industry in question. Such information, is, however, difficult to obtain. Corporations do not want their sales known, although it is the all-essential information if a prediction of the fate of the industry is to be made. It is only recently that such data have been divulged on any useful scale. But until they are known for every industry, and for every stage of the process, from consumption through the various processes of marketing and manufacturing backward to the extraction of raw materials, little progress can be made toward complete credit analysis.

Use of Composite Statements

The present fragmentary data must eventually be supplanted by full and regularly analyzed information. A basis for such study has been laid, also chiefly by Mr. Wall in cooperation with the Robert Morris Associates, in the analysis of composite balance sheets and income statements. Mr. Wall's use of such data is different, however, from that here contemplated. His method was developed out of a need for estimates of proportions to be expected between balance sheet and other financial data of any company applying for a loan. This led to the computation of average ratios from the composite statements of similar companies. Thus, while the "rule-of-thumb" requirement that current assets be twice as large as current liabilities has become generally accepted, it was found that in some industries much higher proportions were constantly maintained by the more successful units. Likewise in other industries, a lower ratio was not incompatible with successful operation. Similarly, it was found that, on the whole, manufacturing establishments needed more fixed capital in relation to current assets than was required by trading or merchandising enterprises, such a wholesalers, and that these ratios, varied between

manufacturers and between wholesalers. The other ratios were found to vary also from industry to industry and process to process within industries. It became necessary, therefore, for a credit man who was called upon to judge the condition of a prospective borrower, say a manufacturer of shoes, to know how the financial statement of a shoe manufacturer should look. From a comparative review of the statements of the applicant over a period of time, the trend toward a better or worse condition could be determined. Furthermore, it would be expected that the financial structure of the company under consideration would conform to that found to be typical for companies of its size. Finally, the average ratios were used for the comparison of progress or retrogression in the credit position of the individual company as compared with others. If any given company were improving, it might be that others were improving more rapidly, thus indicating a relative downward trend.

This type of analysis represents a necessary refinement of the study of individual units. Although it goes no farther than the individual it contains a basis on which a broader view of the credit problem can be built. Once we have become accustomed to the use of composite statements based on companies within an industry, sub-grouped by processes and size, there is the possibility of analyzing in complete and orderly fashion, industrial processes as carefully as the analysis is made in the case of individual borrowers. As banks accumulate more and more statements, the analysis can be made more accurate and useful.

The point which is overlooked by the individualized analysis is that the average ratios have a deeper significance than mere standards with which to compare the separate enterprises. Changes in the average ratios should be interpreted as indications of changing credit conditions in the industry as a whole, that is, changes in the risk involved in

making these goods the basis of credit extension. It is not sufficient, for example, to ascertain, as can be determined from a current ratio, that a given concern is in possession of an inventory and receivables which bear a proper relationship to current indebtedness. The total of such goods about to be offered to purchasers, as well as the total amount of credit extended against them, as determined by a current ratio based on a composite statement, forms an important element in the "industrial risk".

Thus each of the salient relationships brought out by the refined financial analysis has a counterpart in the aggregated statements. Each has its use in determining whether the type of economic good involved is being made the basis of too large a volume of credit. Current ratios for industries will not only show that the total volume of credit is increasing with an increase in the volume of goods, but will also show which goods are responsible for the growth in credit. A current ratio which indicates that the burden of debt based on a given commodity is increasing, may be in itself evidence that the liquidation of the debt by the sale of the goods will be difficult or impossible. But if the current ratio is supplemented by comparison of both the current assets, as a group, and subgroups, consisting of receivables and inventory, with sales, further evidence is obtained.

Or, again, the composite balance sheet might indicate an increase in the amount of fixed assets in the industry. A comparison of these with the sales of the industry will assist in estimating the justification of this increase. And further as the banker is unwilling to finance a borrower in the purchase of fixed assets, and wishes to know the relationship between the fixed assets and the net worth of the business, so for the industry as a whole, a ratio of net worth to fixed assets will indicate whether there is a sufficient capital accumulation to absorb losses which might occur. A related test

is the comparison of the total debt with the net worth. The final element in this phase of the analysis requires that the banks examine their own condition. Although the fixed assets are being financed by the issue of bonds or stocks, and although the proportion of bonds in relation to the net worth is not excessive, it might be found that the banks have been expanding their liabilities on the basis of these same fixed assets by purchasing or lending on the bonds or stocks. Bankers and theorists often overlook this possibility and even suggest that there is no reason why bank credit cannot be expanded just as well on securities as on so-called liquid loans. While they are very cautious about providing the fixed capital for individual enterprises, they are less cautious when considering the growth of demand deposits in the aggregate. Thus we come to the conclusion stated previously, namely, that bank deposits should not expand on the basis of bonds and stocks.

There is another aspect of the analysis of the statements of companies which are engaged in the same type of business, which should be emphasized. In addition to the use of the composite statement as a reflection of the condition of the industry, the individual statements of which it is composed must be studied separately. The composite statement is subject to the same limitations as all averages, namely that it conceals a great deal of essential data. In this case there may be a sufficiently large number of companies in financial difficulties to start a wave of liquidation which will pull the good companies down by lowering the values of their inventories. Reliance cannot, therefore, be placed on the composite statement alone; the condition of the industry must also be determined by a joint review of the individual companies of which it is composed and the net result of their combined operations.

Credit Extension and Credit Control

Such analysis of the credit position of industries holds a key place in the study of credit. It is, so to speak, a connecting link between the extension of credit, as the banker sees it, and the control of credit as the theorist sees it. Theorists have been too much concerned with the question, "how much credit is necessary to carry on a nation's or the world's trade." They have isolated one element in a complex credit system, the total volume of credit, and have sought a criterion by which this factor should be regulated. Theorists, fascinated by gold, which at one time was an important medium of exchange and is now used to settle unpaid credit balances, have assumed gold to be the basis on which the superstructure of credit rests. The importance of clearance as the support of the credit structure has thus been entirely overlooked. When the problem is approached from the point of view taken here, the commodities upon which the credit has been extended become of paramount significance. While some writers have stressed the importance of a proper relation between goods and credit in order to maintain price stability, these elements have been treated as independent variables. No consideration has been given to the specific goods which have been made the basis of the debt-credit structure or to the likelihood of an incorrect estimate of the values of the goods leading to the creation of artificial purchasing power. This results in raising the prices of other goods, while leaving those on which the credit was based incapable of commanding enough bank credit, when sold, to liquidate the debt which was the basis of the credit. Goods have been viewed as physical quantities without recognition of the fact that when they have been made the basis of bank credit they are transferred to the realm of values.

The banker, on the other hand, has been concerned with

the ability and willingness of borrowers to repay. Although he has come to recognize that the ability to repay depends on the possession of certain types of goods, he has not taken sufficient cognizance of the interdependence of similar enterprises. He has not, in other words, considered the possession of similar goods by other concerns. Furthermore, he has not realized that the "loans" which he was making were building up the aggregate of bank deposits on the basis of the goods to which he was looking as the source of repayment.

Credit Analysis Viewed from the Banking Side

Viewing credit extension from the point of view of credit control, that is, starting from the banking side of the credit structure rather than from the industrial, we arrive at the same type of analysis. But we also see that there is need for improvements in the type of banking data available. It is not sufficient merely to isolate one item, the total volume of deposits. Attention must also be given to the type of debts which form the basis of these deposits. Emphasis must be shifted from the *quantity* of banking liabilities to the *quality* of the assets. In the section on capital goods and credit extension, and at other points in this monograph, reasons were given why deposits should not increase on the basis of securities. But after allowance has been made for this limitation there is need for further analysis of bank assets. They should first be classified according to the industries out of which they have arisen. That is, we should know on which goods the hope of liquidation has been placed. The volume of credit which is found to depend on specific types of goods should then be related to the factors affecting their probable sales price as outlined above, and to the other elements in the financial structure of the industries involved.

A further step in the analysis of credit, from the banking point of view, involves a study of clearance. Clearings figures have been used mainly as indexes of the volume of "trade". Trade, however, must be interpreted as the exchange of goods, not merely as the volume of sales, regardless of whether they are being paid for or not, and irrespective of their distribution. Bank clearings should, therefore, be studied in relation to the movement of reserves, that is, the proportion of checks cleared to the amount of the unsettled balance should be ascertained. This should be done for each bank, each clearing center, each federal reserve district, and for the country as a whole in relation to other banking systems. Thus the growth of unbalanced sales or purchases can be measured. In this way an estimate of the soundness of the credit system, as a means of making exchanges without the use of money, can be made. If trade is requiring an increasing proportion of "money", in the sense of reserves or gold, then the credit system cannot perform its function. If credit has already been extended in such a manner as to give rise to sales or purchases which are not balanced by reciprocal purchases or sales, then it is on the road to a breakdown.

Thus the degree of perfection or imperfection of clearance is an index of the soundness of the credit structure. If a bank or group of banks has a persistently unfavorable clearings balance, it is warned to examine its assets closely to determine which debts are not being repaid and which of its extensions of credit are giving rise to the drain of "cash". It is these which should be restricted. But it is a wiser policy to anticipate this condition by thoroughly analyzing the extension of credit, when first made, to determine the personal and financial risks of the individual borrower, and the commodity risk connected with the industry involved.

The industrial and banking data at present available are hopelessly inadequate to provide the information necessary to determine the soundness of the credit structure in the manner outlined above. But broad generalizations cannot be substituted. If it is impossible to know the condition of trade and industry, then the banking system must continue to operate blindly and be subjected to periodic strains and crisis.

CHAPTER XII

THE ADMINISTRATION OF CREDIT CONTROL

The Aims of Credit Control

JUST as it has become necessary to abandon the search for single guides which will indicate properly the total volume of credit, so the effort to place on single instruments the responsibility for the control of the credit system must be relinquished. The constant attention of the banks must be directed to the all-important function of testing the credit of prospective borrowers and to examining the bases upon which the credit structure is built. This must start with an analysis of the individual applicants, checked by reference to the credit position of the industry involved, and finally interpreted in the light of the conditions of clearance between the banks as a whole and the public, as shown by the relations between savings and investment, production and consumption. In addition, the banks have a further check in the analysis of the perfection of clearings of individual banks, groups of banks and the banking system as a whole, and of the condition of their portfolios.

The Instruments of Control

The instruments of control are those in use daily by every bank, namely, the refusal to make loans and the scaling down of the proportion of the estimated sales values which it is willing to recognize as a basis for bank credit. While increased interest rates may prove of some assistance in reducing the willingness of the applicant to borrow, we have seen that in most cases they are ineffective because they cannot be

raised sufficiently. But more serious is the implied assumption regarding the nature of credit upon which such reasoning is likely to be based. This assumption is likely to invert the relationship between business and banking by suggesting that the banks have a commodity, credit, which they are willing to "sell" to the highest bidder, thus distracting attention from the analysis of the borrower.

The Difficulties of Control

Much more difficult, though, than the questions of guides to credit control and the instruments of control is that of administration. The reason for this is that nobody wants credit controlled. The quantitative approach offers no less difficulty than the qualitative; in fact, it presents more. Since everyone is in business for profit, no one wants to curtail operations; bankers no more than industrialists. If the quantitative method is followed, there is no discrimination between borrowers and industries; there is merely a general increase in the difficulty of obtaining banking facilities. Everyone, therefore, is opposed to restriction, and some whose activities are not particularly risky add weight to the opposition by emphasizing the effects which the policy will have on them. Evidence of this was given in the United States in 1929. Although there was a fairly wide recognition of the fact that the amount of credit being extended to the stock market should be reduced, there was also a desire not to penalize industry. So it will always be with quantitative control,—there will always be a feeling that certain activities should be restricted and others not. The opposition will therefore be able to prevent the adoption of any restrictive measures.

1. Discrimination between Industries

When qualitative control is suggested, on the other hand, the opposition is based on charges of discrimination between

industries, the too autocratic powers of the bankers, etc. This is partly due to a misunderstanding of the nature of credit control. It is often assumed to be identical with industrial control; that is to say, with the direction of industry itself. It is, therefore, objected that the bankers are no more omniscient than business men and should not attempt to favor one industry while curtailing another. The use of the word "rationing" in conjunction with "credit" has probably led to identification of qualitative control with the "rationalization" of industry.¹ But this point of view has a somewhat perverted orientation. The qualitative control of credit does not imply that business men are to be restricted by the banks from undertaking whatever endeavors they wish, provided that the risks are properly allocated. The entrepreneur's risk should be borne by the net worth of the business. It should be provided for out of the accumulated income of the community. The securities which business offers should be sufficiently differentiated so that the investor can estimate the proportion of the risk which he is bearing. The banks are merely interested in facilitating exchange. When an industry can prove clearly that it has exchangeable goods whose value can be fairly well estimated, the banks are justified in providing the media of exchange. And if an industry accumulates such a volume of goods that, when compared with the current sales and consumption of these goods, there is reasonable doubt as to their exchange value, the banks are justified in reducing the volume of media of exchange which they are creating on the basis of such goods.

¹ For a discussion of credit rationing, see Pigou, *Industrial Fluctuations*, part ii, ch. v. The author does not feel that his discussion of commodity rationing is applicable to credit because of the difference between commodities and credit. The problem of attempting to estimate the credit of an industry is different from that of equitably distributing a limited quantity of goods. (See p. 271.) The reader will find Pigou's other objections discussed at various points throughout this volume.

Once we become accustomed to the thought that the basis of credit is to be found in goods and that it therefore differs between industries, it should be no more difficult to recognize that some *industries* are in a position to borrow more than others, than it is to see that some *individuals* are able to borrow more than others.

2. Directing the Flow of Credit

A further difficulty which is often advanced in regard to the administration of credit control is that the flow of credit cannot be directed. It is said that once created it cannot be kept out of some channels, while being permitted to enter others. Although this criticism is frequently directed against qualitative control, it is really an objection to quantitative control. As an example of this difficulty, the following passage from Reed is illustrative. "As an indicator, however, of the special need of easier credit, attention might be called to the course of agricultural prices. During the first half of the year the Bureau of Labor's price indices, old series, showed that farm products were falling even relatively to general wholesale prices."² As this would cause the price index to decline, the quantitative approach would require that credit be expanded. But, says Reed in a footnote to the above passage, "It was not, of course, easy to maintain that more abundant credit could be confined in its price effects mainly to agricultural products. Many mild price inflationists went no farther than to insist that it would be desirable to take the chance that price improvement in general would improve the adjustment between various classes of prices." There seems, however, to be an equal chance that the increased credit would affect other prices, thus increasing the maladjustment, and making the farmers' ultimate fate still worse. The same objection would apply to a gen-

² *Op. cit.*, p. 71.

eralized restriction of credit. Qualitative control, on the other hand, is concerned with preventing the inflation of credit through the admission of goods to exchange at a higher valuation than the market ultimately places on them. Such control is, therefore, primarily concerned with restrictions, specific rather than general. The objection to this is that credit cannot be prevented from flowing into certain channels. On closer analysis, however, this method seems to have greater probability of success than the quantitative. Inherent in the assumption that the flow of credit cannot be controlled is the assumption that credit is like water, something which the banks pour out, which is to be competed for, and which will flow where the highest rates will be paid. The fact is overlooked that the banks do not increase their liabilities without at the same time increasing their assets. Over the latter they certainly should have some control. It is true that once created, credit cannot be controlled, cannot be forced for the purchase of farm products, cannot be prevented from going to the automobile industry and from being encouraged to go to the textile industry. It is over the extension of credit that the banks should exert control. Suppose, for example, that it is desired to restrict the amount of credit which the banks are extending to the manufacturers of automobiles. How can the banking policy be circumvented?

One possibility is that the automobile manufacturers might purchase more on credit from the steel industry, which in turn would borrow more from the banks. But if the analysis of the steel industry were also a part of the regular analysis of extensions to individual steel companies, it would soon be seen that the increase in the current assets of such companies, traceable to the increase in accounts receivable, was due to larger debts owed by the automobile industry. The credit position of the steel industry would to that extent

be impaired. So with the other purchases of the automobile industry. It is, therefore, necessary that the analysis of industries be continuous and complete if the banks are to perform their function properly.

A second possibility is that the automobile industry might circumvent the banks by floating securities. But since it is one of the requirements of credit control that the banks shall not expand their demand deposits on the basis of securities, this flotation would have to be in competition with other securities. If, after careful investment analysis, people preferred to risk their savings in the automobile industry rather than in others, that is their privilege. But if the venture failed, the banks would not be called upon to make the error good out of their reserves, thus imperiling the deposits of their customers who had no intention of risking their funds in the automobile trade.

3. Control of the Banks

In so far as the directorates of banks are dominated by industrialists, the difficulties of credit control are increased. It is obvious that the borrowers will be hesitant to control themselves. This situation is more likely to exist in the field of commercial banking than in central banking.

But the central banks are faced by a similar problem. This is particularly true of the federal reserve banks. One third of each of the directorates of the twelve banks is composed of business men. Unless they have come to take a broad view of industry as a whole, and individual industries as the units of which it is composed, they are likely to be opposed to credit restriction, particularly if their industry is to bear the brunt of the pressure. A second third of the directors are bankers. If they, in their capacity as bankers, have not grasped the view of industries as applicants for credit, as opposed to individuals, they are not likely to take

this view as central bankers. Furthermore, if their business is increasing, and they have not been able, as individual bankers, to detect the inflation they are not likely to do so as central bankers. We have, thus, the spectacle of a prominent New York banker who was also a director of the federal reserve bank of his district, using the funds of his bank to defy the restrictive policy of 1929 imposed by the federal reserve bank.

The remaining directors of the federal reserve banks are appointed by the Federal Reserve Board. In so far as these directors are subject to political influence, they are likely to oppose credit restriction. For if such restriction brought to light business difficulties, undesirable political conditions might follow. If the analysis of the credit position of the farmers, for example, indicates that their products will not sell at a sufficiently high price to liquidate their debt, the proposal to curtail credit to them would be strenuously opposed. There are many farmers and each has a vote. The same reasoning applies to other industries, either because of the number of people engaged in them, the size of their contributions to the campaign funds, or the general desire not to hurt any business. What is usually done in situations of this kind is to lend more to those who have poor credit positions, in order that they need not sell their products. Sometimes an all-around increase in credit is proposed in the hope that the unfortunate industries will somehow benefit. In any event, directors appointed by the Federal Reserve Board would naturally be bankers or business men, and not primarily central bankers interested solely in the problems of central banking.

Qualitative Credit Control and a "Planned Economy"

In view of the difficulties of controlling credit qualitatively, it is an interesting question whether credit can be

controlled in an "unplanned" economy. Sir Basil Blackett is of the opinion that, "a stable price level is impossible without planning in other economic and political fields." * It would obviously be easier to obtain uniformity of opinion in regard to the condition of industry if the control of industry were centralized. A uniform banking policy would be obtained under a concentrated organization of banking. It may be that in time there will come a recognition of the necessity of creating a monopoly for the issue of deposit currency, similar to that which has come to be generally established for the issue of note currency. The currency problem, however, would exist as a distinct problem in a planned economy. There would be many differences from that which is found in an unplanned society. Owing to the existence of a single bank, there would be no interbank drain of reserves. The situation would be similar to that discussed in Chapter IV where a community with only one bank was used as an illustration. Assuming that the community was allowed free choice in consumption, there would arise the problem of dealing with industries whose goods did not command as much in consumption as was spent in their production. This could not result in a shifting about of bank reserves, but would have an inflationary effect. One of three policies might be followed. The first would be a continuous inflation of the currency. Secondly, assuming all industries to be centralized, losses in one direction might be made up by profits in another so that bank advances would always be paid off. Thirdly, each industry, as well as each geographical section of the country, might be made to stand on its own feet and be required to meet its obligations in much the same way as it is done at present. Under a planned economy, however, the monopolistic control of industry might permit an easier adjustment of production to

* Sir Basil Blackett, *Planned Money* (New York, 1933), p. 21.

consumption than that which now takes place. Since prices could be fixed, there might be some adjustment of consumption to production. There have been attempts to fix prices in the present economic system. These however have been instituted for the purpose of fixing profits, and since production is not monopolistically controlled, it has usually been found that, ultimately, production and consumption determined the price so that the price agreements became ineffective.

It is obviously impossible to discuss the monetary aspects of a planned economy in this treatise. They cannot be discussed independently of the social aims and the methods of planning and control which might be adopted. But it is the belief of the author that much the same methods of approach to the currency problem would have to be followed as those here outlined.

The Rôle of the Individual Banks in Credit Control

In spite of the obvious difficulties with which the control of credit is confronted, there are still many improvements in banking technique which can be adopted. The difficulties cannot be ignored or evaded but must be faced. If roundabout methods are adopted some way will be found to circumvent them.

At the root of the technical difficulties is the need for uniformity of action among a large number of individual banks.⁴ If the time has come to restrict credit in certain industries, all banks must realize the necessity. If an individual bank attempts to pass on loan applications, in the

⁴ Prendergast is one of the few authors who recognizes this. He says, for example: "It is probably one of the weaknesses of the system that its good management must depend upon the collective judgments and will of a very great number of men and interests, each acting for himself, almost always on his own individual ideas of right and wrong, of accuracy and inaccuracy, responsible only to himself." *Op. cit.*, p. 17.

light of broader considerations than the condition of the individual applicant, it may stand to lose customers to other banks which do not have such a view. It is, therefore, difficult to secure strong action in the early stages of inflation. It is, furthermore, expensive for each bank to make a complete analysis of each industry, and is actually an unnecessary duplication of effort.

But granted these obstacles, it should be possible to develop a general understanding by bankers and business men that the credit position of individual industrial units is affected by the condition of the industry in general. Just as business concerns, in seeking to establish their credit standing, have come to recognize the necessity of presenting statements showing their financial condition, in addition to those showing their personal qualities, so they might be led to realize that their individual statements must be interpreted in the light of other statements from similar companies. They do not exist independently of other elements in the business structure. If all well-managed banks took this stand, industry would hesitate to resort to less intelligent bankers when they had been refused by the better ones. They could not have recourse to the money market for there they would be subjected to even closer scrutiny. Furthermore, such analysis of the credit standing of business men might encourage them to refrain from seeking unwise loans.

Thus it is seen that the development of credit control is not an over-night process that can be instituted by a central bank which suddenly discovers the quantity theory of money. It will depend on a gradual broadening of their grasp of the economic structure on the part of bankers and business men.

The Rôle of the Central Bank

In this work the central bank is admirably adapted to the position of leader. It is avowedly a public service institu-

tion, placing the stability and equilibrium of the economic system as a whole above its own profit, and above the advantage of one group at the expense of others. It can seek to curb those whose activities are endangering the welfare of all.

1. Providing Information

As a result of its dealings with all banks and all industries it is in a position to gather and make available the information which it is too costly for each bank to obtain for itself. Leaving the analysis of the individual industrial units to the member banks, it should devote itself to the study of the condition of each industry and of the economic structure as a whole. By reports on specific industries and interpretation of the data thus obtained, it can make available to the member banks the information which must form the basis of their uniform action.⁵ While some may object that such activities would "hurt" their business, the social point of view would hold this course to be more reasonable than to allow the business of some to hurt all. The central bank is thus justified in preventing its liabilities and those of the member banks from being poured into the stream of incomes, which the recipients consider as representative of definite values while as a matter of fact they are artificial. Eventually this artificiality will become apparent and the results will be much worse than those of the restriction.

⁵ Foster and Catchings make this service a function of government. "By means of this information service . . . rather than by means of price-control, the Government will find its opportunity to aid in stabilizing production." *Money* (New York, 1911), p. 194. Political difficulties make this less satisfactory than the banking method. Government agencies might be tempted to stress the satisfactory situations rather than the unsatisfactory ones which it is necessary for the banks to emphasize.

2. Approach to Industry through the Study of Banking Conditions

As a supplement to the industrial analysis, the central bank should make a banking study. The point of departure should be the perfection of clearance in various centers. Thus the course of trade can be determined and when this study is coupled with an analysis of bank portfolios and of the position of the various industries, a basis can be laid for corrective measures.* The central bank can thus locate the inflating banks and industries and institute restrictive measures of its own where needed and, by the encouragement of an enlightened attitude on the part of the banks and business men, secure their cooperation.

3. Control through its own Operations—Acceptability of Paper

The central bank may approach the problem of credit extension from two points of view. It can consider the paper which it either re-discounts or purchases, thus placing emphasis on its own portfolio and making it as liquid as possible; or it can place emphasis on the borrower and his credit position, be it bank or industry. This latter approach requires a broader interpretation of eligibility and the formulation of requirements which would have to be met.

* Note the improvements in the publication of banking data which the *MacMillan Report* recommends—

Money at call

Money to the money market

Money to the stock exchange

Money in foreign securities

Loans to "productive" industry (mining, manufacture, etc.)

Loans to commerce, transport, distribution

Loans to finance, insurance, etc.

Loans to agriculture

Loans to persons in professions, entertainments, etc.

Loans to private persons, building, and others.—Par. 410, pp. 175-176.

It still remains true, however, that the accumulation in the portfolios of the banks of the paper of over-extended industries is one of the causes of inflation. If, after careful analysis of an industry, the central banks decides that there is insufficient proof that the commodities in which the borrower deals are likely to sell for the prices at which the current estimates are being made, caution should be exerted in accepting the paper for re-discount or purchase. Member banks should be informed of these situations and urged to cooperate.⁷

4. Basing Rediscounts on Condition of Applying Banks

More important however, than the paper submitted is the condition of the bank seeking rediscount facilities. A bank which attempts to increase its reserve balance through borrowing at the reserve bank does so as a result of its total operations. It is true, that some part of its portfolio is at fault. But it might not present that part for rediscount or collateral. It could, therefore, borrow from the central bank and continue making the same errors in its own loan policy. Thus the eligibility requirement, reinforced by acceptability provisions, is more useful as a method of keeping the portfolio of the central bank in good condition than as an instrument of credit control. If a bank were per-

⁷ Willis and Steiner, in the following passage, indicate that the federal reserve banks have the power to alter their attitude toward various kinds of paper: "The fact that in recent years it has been deemed best to simplify the rate structure by making rates more uniform throughout the country, and comparatively uniform in their application to different types of paper within the System does not in any way infringe upon the power originally assumed and constantly exercised by the Board in its earlier years—that of changing rates as between districts and classes of paper and maturities, provided only that its treatment of all members in a district is identical and without discrimination." *Op. cit.*, p. 89.

See also part vi, *Hearings on S. Res. 71* before a Subcommittee of the Committee on Banking and Currency, U. S. Senate, 72nd Congress, 3rd Session.

mitted to follow the practice outlined above, it could readily get into such a condition that it would hold nothing but badly frozen assets and then, having no basis for further borrowing, be subject to bankruptcy. It would thus destroy confidence in other banks, and in general be a menace to the whole banking structure. It is to avoid the cumulative progress toward such a condition that the central bank should develop the policy of considering the condition of the borrowing bank rather than the paper submitted.

Such a policy was recognized in the Phelan Amendment, passed in 1920, in the provision that rediscount rates might be graduated or made progressive on the basis of the amount of the advances and discount accommodation extended by the federal reserve bank to the borrowing bank.⁸ This amendment was, however, revoked in 1923 with the passage of the Agricultural Credit Act.

5. Relation to the Money Market

In addition to the continuous study of industries and banks, the central bank has other functions of which the two most important are: first, its relation to the money market, and second, its relation to the foreign exchange market. While it is impossible to control the whole credit structure through operations in the money market, there are several other functions which the central bank can perform. For example, Burgess points out that the operations of the federal reserve banks have been instrumental in reducing the spread between the rates of interest charged for paper of various maturities, and between the rates in the east and those in the west. They have also been responsible for a reduction in the amplitude of the seasonal fluctuations of market rates, and the height to which panic rates rise.⁹

⁸ Willis and Steiner, *op. cit.*, p. 523.

⁹ *The Reserve Banks and the Money Market*, p. 295.

Thus within the bounds set by the economic maturity of the country, and the shorter-run conditions of business, the central bank can be of assistance in preventing violent and temporary divergences of market rates from these norms. A phase of this function is the assistance which it can give to government finance for the short periods between tax dates. The central bank must exercise caution, however, to avoid becoming the permanent source of such loans.

Underlying the whole consideration of the money market is the necessity of keeping in a liquid condition the bank credit already extended. We have seen how the credit extended to industry becomes income. When this income is not paid out for consumption or ownership it accumulates as bank deposits until the community decides how it is to be spent. During the interval of decision these "funds" accumulate in the money market. There is always the possibility that this is a sign of inflation; that is, that somewhere in the banking system credit is being extended on the basis of goods which are not entering into consumption at the same rate as they are being produced. This is artificial purchasing power in the sense that it is in excess of the exchange value of the goods. If these funds become congealed into fixed assets through security purchases or security loans, they will not be available should the depositors decide to use them for consumption. Should they so decide to use them, they will create an artificial demand for other products, which artificiality will become evident when the producers who were the original borrowers are unable to sell their products. As a result the latter will suffer losses, reduce operations, and add to the number of the unemployed. The effect on the artificially stimulated industries will then be more severe than if they had had to conduct their business without such stimulation.

The other alternative is that the banks may use in the

purchase of securities, or in making loans on securities, accumulating bank deposits, which are in reality savings that have not as yet been applied to the purchase of securities. The only effect will be a shifting of demand between the various types purchased by the banks and those ultimately selected by the depositors. On the other hand, if the conditions of the money market have been such as to attract these funds into commercial uses, rather than into security purchases when the banks had "surplus funds", the disequilibrium caused by the security purchases by the public will be such as to upset the security market and bring pressure on the short term borrowers.

Thus, when the funds in the security markets are accumulating, there is the possibility of future difficulty no matter in which direction the banks use them. The safest policy for the central bank to pursue is to prevent a too rapid accumulation of such funds and consequent unfortunate effects in some directions, by temporarily absorbing such funds by sales of its assets in the open market. When the bank has determined in which direction the depositors intend to use the funds it will then be in a position to expand its liabilities again, for its portfolio has been reduced and its liabilities are few. In the meantime it should attempt to understand the causes of the growth of the funds, and if inflationary credit extensions are taking place, seek to curb them.

6. Relation to Foreign Exchange Market

Enough has been said in another chapter of the conditions which might arise to unbalance the international payments to show the course of action which the central bank should take to correct them. Since the net results of the interaction of the domestic economy with those of other countries are evidenced in the foreign exchange market, and since the

central bank is responsible for the clearance of the debts arising from these international relations, it should give primary attention to this market. If imports and exports are included in the study of individual industries, and if the extension of credit is considered qualitatively, the international problem becomes part of the general banking and credit problem; the distinction between domestic and international trade becomes less important; and the domestic economy is recognized to be what is in fact, merely a part of world economy. It cannot be considered independently of it.

BIBLIOGRAPHY

- Anderson, B. M., *The Value of Money*, The Macmillan Co., New York, 1917.
- , *The Chase Economic Bulletin*, The Chase National Bank, New York City, vol. xi, no. 1, March 16, 1931; vol. xi, no. 3, June 12, 1931; vol. xi, no. 5, November 20, 1931; vol. xii, no. 2, May 16, 1932; vol. xiii, no. 3, June 9, 1933.
- Angell, J. W., *Theory of International Prices*, Harvard University Press, Cambridge, Mass., 1926.
- Angell, J. W. and Ficek, Karel F., "The Expansion of Bank Credit," *The Journal of Political Economy*, vol. xli, nos. 1 and 2, February and April, 1933.
- Beckhart, B. H., *The Discount Policy of the Federal Reserve System*, Henry Holt & Co., New York, 1924.
- Beckhart, B. H., Smith, J. G. and Brown, W. A., *The New York Money Market*, Columbia University Press, New York, 1932.
- Blackett, Sir Basil P., *Planned Money*, D. Appleton and Co., New York, 1933.
- Burgess, W. R., *The Reserve Banks and the Money Market*, Harper & Bros., New York, 1927.
- Burns, Arthur F., "Quantity Theory and Price Stabilization," *The American Economic Review*, vol. xix, no. 4, Dec., 1929.
- Cannan, E., *The Paper Pound*, P. S. King & Son, London, 1919.
- Cassell, G., *Money and Foreign Exchange after 1914*, The Macmillan Co., New York, 1923.
- Chapman, J. M., *Fiscal Functions of the Federal Reserve Banks*, The Ronald Press Co., New York, 1923.
- Colwell, S., *The Ways and Means of Payment*, J. B. Lippincott and Co., Philadelphia, 1860.
- Currie, Lauchlin, "Treatment of Credit in Contemporary Monetary Theory," *The Journal of Political Economy*, vol. xli, no. 1, February, 1933, pp. 58-79.
- Curtis, R. E., *Economics, Principles and Interpretation*, A. W. Shaw Co., New York, 1928.
- Danielian, N. R., "Theory of Consumers' Credit," *The American Economic Review*, vol. xix, no. 3, September, 1929.
- Davenport, H. J., "Velocities, Turnovers and Prices," *The American Economic Review*, vol. xx, no. 1, March, 1930.
- Dunbar, C. F., *The Theory and History of Banking*, 4th edition, G. P. Putnam's Sons, New York, 1922.

- Edie, L. D., *The Banks and Prosperity*, Harper and Bros., New York, 1931.
- Fisher, Irving, *The Purchasing Power of Money*, The Macmillan Co., New York, 1911.
- Foster, W. T. and Catchings, W., *Money*, Houghton Mifflin Co., New York, 1923.
- Furniss, E. S., *Foreign Exchange*, Houghton Mifflin Co., Boston, 1922.
- Goodliffe, W., *Credit and Currency*, P. S. King & Son, London, 1927.
- Gregory, T. E., *An Introduction to Tooke and Newmarch's*, "A History of Prices and of the State of the Circulation from 1792 to 1856," P. S. King & Son, Ltd., London, 1928.
- , *The Gold Standard and its Future*, E. P. Dutton & Co., New York, 1932.
- Guthmann, H. G., *The Analysis of Financial Statements*, Prentice-Hall, New York, 1925.
- Hansen, Alvin, "Fundamental Error in Keynes' 'Treatise on Money,'" *American Economic Review*, vol. xxii, no. 3, September, 1932.
- Hardy, C. O., "Savings, Investment and the Control of Prices," *Journal of Political Economy*, 39 (3), June, 1931.
- Hawtrey, R. G., *Currency and Credit*, 2nd edition, Longmans, Green & Co., London, 1923.
- , *The Gold Standard in Theory and Practice*, Longmans, Green and Co., Ltd., London, 1927.
- , *The Art of Central Banking*, Longmans, Green & Co., London, 1932.
- Hayek, Friedrich A., *Prices and Production*, The Macmillan Co., New York, 1932.
- Hearings Before the Committee on Banking and Currency*, House of Representatives, 69th Congress, First Session, H. R. 7895, 1927; 70th Congress, First Session, H. R. 11806, 1928.
- Hearings Before the Committee on Banking and Currency*, U. S. Senate, 72nd Congress, First Session, H. R. 11499, S. 4429.
- Hearings Before the Senate Sub-Committee on Currency and Banking*, 71st Congress, First Session, S. 4115 and Third Session, S. Res. 71.
- Hobson, J. A., *Gold, Prices and Wages*, Methuen and Co., Ltd., London, 1913.
- James, F. C., *The Economics of Money, Credit and Banking*, Ronald Press Co., New York, 1930.
- Jevons, W. S., *Money and the Mechanism of Exchange*, D. Appleton & Co., New York, 1903.
- Kemmerer, E. W., *Money and Credit Instruments in their Relation to General Prices*, 2nd edition, Henry Holt and Co., New York, 1909.
- Keynes, J. M., *A Treatise on Money*, Harcourt, Brace and Co., New York, 1930.
- , *Monetary Reform*, Harcourt, Brace and Co., New York, 1924.

- , "Keynes' Fundamental Equations; A Note," *The American Economic Review*, vol. xxii, no. 4, December, 1932.
- , "A Rejoinder," *Economic Journal*, vol. xli, September, 1931.
- Laughlin, J. L., *A New Exposition of Money, Credit and Prices*, University of Chicago Press, Chicago, 1931.
- Lavington, F., *The English Capital Market*, Methuen & Co., Ltd., London, 1921.
- Lawrence, J. S., *Stabilization of Prices*, The Macmillan Co., New York, 1928.
- Lounsberry, R. H., "Velocity Concepts and Prices," *The Quarterly Journal of Economics*, November, 1931, vol. xli.
- MacLeod, H. D., *The Theory and Practice of Banking*, Longmans, Green & Co., London, 1902.
- Madden, J. T. and Nadler, M., *Foreign Securities*, The Ronald Press Co., New York, 1929.
- Magee, J. D., *An Introduction to Money and Credit*, F. S. Crofts & Co., New York, 1927.
- Marshall, Alfred, *Money, Credit and Commerce*, The Macmillan Co., London, 1923.
- , *Principles of Economics*, 8th edition, The Macmillan Co., New York, 1920.
- Mill, J. S., *Principles of Political Economy*, D. Appleton & Co., New York, 1920.
- Mills, Frederick C., *The Behavior of Prices*, The National Bureau of Economic Research, Inc., New York, 1927.
- Mitchell, W. C., *Business Cycles; The Problem and Its Setting*, The National Bureau of Economic Research, New York, 1927.
- Nicholson, J. S., *A Treatise on Money*, 4th edition, Adam & Charles Black, London, 1897.
- Palgrave, R. H. I., *Dictionary of Political Economy*, The Macmillan Co., Ltd., London, 1919.
- Peake, E. G., *An Academic Study of Some Money Market and other Statistics*, 2nd edition, P. S. King & Son, Ltd., London, 1926.
- Phillips, C. A., *Bank Credit*, The Macmillan Co., New York, 1926.
- Phelps, C. W., *The Foreign Expansion of American Banks*, Ronald Press Co., New York, 1927.
- Pigou, A. C., *Industrial Fluctuations*, The Macmillan Co., Ltd., London, 1927.
- Prendergast, W. A., *Credit and Its Uses*, D. Appleton & Co., New York, 1906.
- Prendergast, W. A. and Steiner, W. H., *Credit and Its Uses*, D. Appleton and Co., New York, 1931.
- Reed, H. L., *Federal Reserve Policy, 1921-1930*, McGraw-Hill Book Co., Inc., New York, 1930.

- Report of the Gold Delegation of the Financial Committee*, League of Nations, Geneva, 1932.
- Report of the Committee on Finance and Industry*, Cmd. Report 3897, London, 1931.
- Riefler, W. W., *Money Rates and Money Markets in the United States*, Harper and Bros., New York, 1930.
- Robertson, D. H., *Banking Policy and the Price Level*, 3rd impression, revised, P. S. King & Son, Ltd., London, 1932.
- , "Mr. Keynes' Theory of Money," *Economic Journal*, vol. xli, September, 1931.
- Salter, Sir Arthur, K. C. B., *Recovery, The Second Effort*, Century Co., New York, 1932.
- Schluter, W. C., *Credit Analysis*, Prentice-Hall, Inc., New York, 1925.
- Schwulst, E. B., *The Extension of Bank Credit*, Houghton Mifflin Co., New York, 1927.
- Seligman, E. R. A., *The Economics of Installment Selling*, Harper and Bros., New York, 1927.
- Shafer, Joseph E., "An Explanation of the Business Cycle," *The American Economic Review*, vol. xviii, no. 4, December, 1928.
- Shaw, William A., *The Theory and Principles of Central Banking*, Sir Isaac Pitman & Son, Ltd., London, 1930.
- Spahr, W. E., *The Federal Reserve System and the Control of Credit*, The Macmillan Co., New York, 1931.
- Sprague, O. M. W., "Price Stabilization," *The American Economic Review*, Supplement, vol. xix, no. 1, March, 1929.
- St. Clair, O., *The Physiology of Credit and of Money*, P. S. King & Son, Ltd., London, 1919.
- Steiner, W. H., *The Mechanism of Commercial Credit*, D. Appleton and Co., New York, 1922.
- Strong, B., *Interpretations of Federal Reserve Policy*, edited by W. R. Burgess, Harper and Brothers, New York, 1930.
- Taylor, W. G. L., *The Credit System*, The Macmillan Co., New York, 1913.
- Trant, James B., *Bank Administration*, McGraw-Hill Book Co., Inc., New York, 1931.
- Tregoe, J. H., *Credit and Its Management*, Harper & Brothers, New York, 1930.
- Wagemann, Ernst, *Economic Rythm*, 1st edition, McGraw-Hill Book Co., Inc., New York, 1930.
- Wall, A. and Duning, R. W., *Ratio Analysis of Financial Statements*, Harper & Bros., New York, 1928.
- Walsh, C. M., *The Measurement of General Exchange Value*, The Macmillan Co., New York, 1901.

- Whitney, Caroline, "The Equation of Exchange and the Price Stabilization Problem," *American Economic Review*, vol. xxii, no. 2, June, 1932.
- Whittlesey, C. R., "Exchange Control," *American Economic Review*, vol. xxii, no. 4, December, 1932.
- Williams, F. H., "The Monetary Doctrines of J. M. Keynes," *Quarterly Journal of Economics*, August, 1931.
- Willis, H. P. and Edwards, G. W., *Banking and Business* (revised and enlarged edition), Harper and Brothers, New York, 1925.
- Willis, H. P. and Steiner, W. H., *Federal Reserve Banking Practice*, Students Edition, D. Appleton & Co., New York, 1926.
- Willis, H. Parker, "The History and Present Application of the Quantity Theory," *Journal of Political Economy*, September, 1896.
- Willis, H. P. and Bogen, J. I., *Investment Banking*, Harper and Bros., New York, 1929.
- Young, Robert, *Industrial Credits*, Harper and Bros., New York, 1927.
- Youngman, Anna, "The Efficacy of Changes in the Discount Rates of the Federal Reserve Banks," *American Economic Review*, vol. xi, no. 3, September, 1921. †

INDEX

- Acceptability, 177, 328
Acceptance market, 168
Acceptances, 81, 83, 86, 168
American banking: differences from English, 162, 163
Anderson, B. M., quoted, 46, 54, 56 n., 120 n., 282 n.
Angell, J. W., quoted, 153 n.; 106 n., 125 n., 174 n.
- Balance of payments: as cause of gold movements, 234, 248; various types, 237 n.
- Bank assets, as origin of liabilities, 278
- Bank costs, effect of rediscount rate on, 174
- Bank credit: based on capital goods, 291, 298, 311; based on securities, 280, 312; demand for, 134; difference from business credit, 99, 100; effect on prices, 99, 100; expansion of, 107, 135; general acceptability of, 99, 100; limits to expansion of, 104; liquidation of, 91, 92; loans of, 97; government of, 268; problem of control, 273; relation to gold, 104, 105, 218; relation to prices, 134; relation to production, 104; source of, 218; supported by clearance, 135; theory of, 281; total quantity of, 94, 102
- Bankers' acceptances, 179
- Banking: concentration of, 324; concepts of, 96; differences between systems, 162, 163; functions of, 82, 95, 97, 99, 108-110, 276; in a closed economy, 118; relation to trade, 118; services of, 39; statistics, 294; structure of, 163; theory, 294
- Banking policy, 155; during period of rising prices, 224; effect on borrowing, 208; effect on business, 208; relation to exchange rates, 242; relation to gold movements, 240, 251; relation to prices, 153
- Banking system: characteristics of, 135, 136; rôle of central bank, 167
- Banking systems, 166
- Bank liabilities, dependence on assets, 278, 314
- Bank loans: commodity loans, 83; effect of non-payment, 142; liquidity of, 130; relation to goods, 83; unsecured, 83
- Bank notes: demand for, 161; increase in circulation of, 143
- Bank of England, 162, 165, 169, 188; advances of, 168
- Bank of France, 169
- Bank rate, relation to market rates, 197, 198
- Bank reserves: depend on, 91; demand for, 138, 139; under the federal reserve system, 139; under the national banking system, 139
- Banks: directors of, 322; functions—credit control, 325; position in depression, 207, 215
- Beckhart, B. H., quoted, 167 n., 173 n., 178 n., 179 n., 187 n., 188 n., 270 n., 271 n.; 105 n., 148 n., 162 n., 174, 175 n.
- Bill brokers, effect of central bank policy on, 187
- Bill market, 163
- Blackett, Sir Basil, quoted, 324
- Bonds, 98, 129; as basis of bank credit, 312
- Bond yields, relation to short-term rates, 199, 200
- Book credits, as media of exchange, 81, 86
- Borrowing, as affected by banking policy, 208
- Bullion Committee, 148
- Burgess, W. R., quoted, 175, 219 n., 330; 105 n., 148 n., 162 n., 179
- Business, effect of banking policy on, 108
- Business credit, difference from bank credit, 99, 100
- Business cycles, crux of problem, 127

- Call loans, 168
 Call-loan market, 179
 Cannan, E., 149 n.
 Cash, increase in circulation, 143
 Capital goods, 211; as basis for bank credit, 291, 298, 311; demand for, 129; price of, 130
 Capitalization theory, 209
 Capital values, effect of central bank policy, 189
 Cassel, G., quoted, 144 n., 172 n., 190 n., 298 n.; 224 n., 258 n.
 Catchings, W., quoted, 327 n.
 Central bank, 92, 123, 144; assets of, 167; condition in a depression, 217; functions of, 164, 177, 326; open market purchases, 93; relation to credit control, 296; relation to foreign exchange market, 332; relation to money market, 167, 330; relation to other banks, 166, 167
 Central bank credit, relation to price level, 166
 Central banking, 105, 143, 160
 Central bank policy: effect on banks, 219; effect on bill brokers, 187; effect on borrowing, 206; effect on business, 182; effect on capital values, 189; effect on member banks, 169, 180; effect on money market, 177; effect on total quantity of credit, 172; in a depression, 217
 Central banks: customers of, 168; power and authority of, 169
 Chapman, J. M., 179 n.
 Cheap money, 160
 Classical doctrine, 229
 Clearance: as the support of bank credit, 41, 135, 218; between banking systems, 123; between banks, 118; between banks and the community, 125; between individuals, 111; relation to gold movements, 91; study of, 315
 Clearing, 92; factors determining balance, 121, 122
 Clearing house, 90
 Collateral, 284; relation to purpose of loan, 293
 Colwell, S., quoted, 112 n., 115 n., 116 n., 118 n., 121 n., 124, 124 n., 125, 127 n., 130 n., 279 n., 282 n., 290 n., 293 n.; 17, 29 n. 34
 Commercial paper house, 187
 Commercial paper market, 179, 182
 Commodity risk, analysis of, 308
 Composite statements: use of, 309; limitations on, 312
 Confidence, relation to credit, 60
 Consols, yield of, 199
 Consumption, 195, 205, 210; importance of, 127-129
 Consumption goods, prices of, 210
 Consumption index, 151
 Control: instruments of, 162; qualitative character of, 164
 Control of credit, as a continuous policy, 176
 Control of price level, inherently inconsistent, 220
 Credit: analysis, 278; as purchasing power, 45; basis of, 50, 59, 77-79; classes of, 80; contraction, 283; control of, 281, 292; corollaries of definition, 66, 67; criticism of quantitative study of, 142; definitions of, 66, 70-74; differentiated from credit instruments, 58; effective, 133; effect of central bank policy on, 172; effect on prices, 66, 204; expansion in depression, 225; extension of, 65, 85, 125, 277; extension differentiated from loans, 53, 54, 67, 68; fiat, 226; frozen, 157; functions of, 49, 74-76; in the quantity theory of money, 34, 35; limits to expansion, 140; liquidation of, 126, 127, 130, 278, 279; liquidity of, 94; meaning of, 47, 48; measurement of risk, 288-290; potential, 133; rate of extension of, 102; rationing, 271, 319; recognition and generalization, 82; relation of confidence and trust to, 60; relation to future income, 63; relation to goods, 61, 64, 277; relation to trade, 112; risks, 303; source of, 224; study of, 272; tests, 284; theory of, 290; tightening of, 142; total quantity of, 65, 87, 89, 90, 161; use of in business, 64, 65; what it is said to be, 49
 Credit analysis, 302; central problem of, 62; of banking conditions, 314; relation to credit control, 278; requirements for, 65
 Credit control, 296; affected by foreign conditions, 230; aims of 317;

- and gold standard, 230; criteria, 147; difficulties of, 318; fallacy in theory, 207; instruments of, 317; limitations of, 176; objections to quantitative, 219, 245, 264, 273; problem of, 68, 82; qualitative, 240, 266; relation to bank assets, 314; relation to credit analysis, 278; relation to credit extension, 313; relation of qualitative to quantitative, 273, 278, 304, 305; relation to reserve base, 229; rôle of banks, 325; rôle of central bank, 327; technique of, 169; theory of, 154, 176, 263; through interest rates, 174
- Credit department, organization of, 307
- Credit economy: nature of, 39, 40, 41, 62; purchasing power in, 132, 133
- Credit extension: concept of, 97; differentiated from lending, 96, 97, 278, 279, 294; principles of, 125; relation to credit control, 313
- Credit instruments: and purchasing power, 38, 138; as evidence of debts, 224; as media of exchange, 58; creation of, 87; differentiated from credit, 37
- Creditor country, gold imports, 246
- Credit policy: and exchange rates, 229, 242; and gold, 229, 239, 240; and interest rates, 229
- Credit risks, relation to quantitative control, 305
- Credit structure: maintained by clearance, 218 (see clearance); soundness of, 65, 66, 94
- Credit system: essentials of, 82; mechanism of, 111
- Credit theory: and credit extension, 281; relation to statement analysis, 287; relation to theory of value, 276 (see credit)
- Credit transactions: differentiated from loans, 57; elements of, 56, 57, 60; types, 52
- Criteria: conclusions regarding, 160-162; conflict of, 149; of credit control, 147
- Current ratio, 288, 311; effect of changing requirements, 102
- Customers' rates, 172
- Davenport, H. J., 31 n.
- Debtor country, gold imports, 246
- Debts: as source of bank credit, 218; evidenced by credit instruments, 224; liquidation of, 140, 285; offsetting, 85, 92; problem of in depression, 225
- Deflation, 275, 285, 292, 301
- Deposits, theory of, 279, 280
- Depression, 214, 222, 301, 305; causes of, 67, 103, 291; debt problem, 225; position of banks, 207
- Devaluation, 261
- Discount policy, nature of, 269, 270
- Disequilibrium, between savings and investment, 210
- Directors, of banks, 322
- Dunbar, C. F., quoted, 136 n., 294 n.
- Dunning, C. W., 284 n., 288 n., 290 n., 303
- Economic maturity, stages of, 235
- Edie, L. D., quoted, 156 n., 300 n.; 148 n., 304
- England, recent conditions, 247
- English banking, differences from American, 162, 163
- Equation of exchange, 135
- Equilibrium: between production and consumption, 192; internal, 234, 239, 247, 248, 251, 254; of savings and investment, 191, 192, 210, 245, 298, 304, 305
- Exchange, 43
- Exchange rates, 159, 161; and credit policy, 229, 242; effect of declining, 239; fluctuations of, 149, 150, 231, 259
- Exports, stimulation of, 241
- Federal reserve banks: assets of, 163, 167; customers of, 168; dealings in acceptances, 172; directors of, 322
- Federal reserve policy, effect on member banks, 172
- Federal reserve rate, effect of, 172-175
- Fiat money, 204, 226
- Fisher, I., quoted, 33 n., 277 n., 282 n.; 281
- Fixed capitals, as basis for bank credit, 286, 311
- Foreign bonds, 159
- Foreign borrowing, control of, 241

- Foreign exchange, 150, 154; control of, 241; market, 163; theory of, 125 transactions, 187
- Foreign exchange market, relation to central bank, 332
- Foreign lending, control of, 243, 248, 251
- Foster, W. T., quoted, 327 n.
- Frozen assets, 299, 306
- Frozen loans, cause of, 130
- Funds, seasonal flow of, 159
- Furniss, E. S., 125 n.
- Gold: and credit policy, 229; as limiting bank credit, 104; as source of bank credit, 106; conservation of, 163; demand for, 31, 33, 40, 93, 138, 143, 144, 244, 271; external drain, 144; maldistribution, 257; regulation of demand, 258; relation to prices, 116; shortage, 257; sterilization, 247; supply of, 31; used to settle balances, 113, 276; value of, 30, 31, 137
- Gold exports: and banking policy, 240; by a creditor county, 242; by a debtor county, 238; offsetting, 163, 164; significance of, 238, 240
- Gold imports: by a creditor county, 247; by a debtor county, 246; significance of, 247, 251
- Gold movements, 149, 161; and banking policy, 239, 242, 251; causes of, 234, 235; influence on price level, 231; offsetting, 232, 244, 251, 254; significance of, 123, 124, 233, 248, 253, 261
- Gold reserves, relation to bank credit, 218
- Gold standard: abandonment of, 140, 251, 263, 264, 265; and credit control, 230; value of, 264
- Goodlife, W., quoted, 277
- Goods, relation to credit, 61, 99, 277
- Government, stabilization program, 215
- Government bonds, yields on, 219
- Government borrowing: for unemployment insurance, 216; in a depression, 214, 215
- Government finances, relation to monetary needs, 216
- Government financing, 159
- Government securities, 179, 180
- Guthman, H. G., 284 n.
- Hawtrej, R. G., quoted, 46, 104, 114 n., 124 n., 126 n., 136 n., 137 n., 138 n., 139 n., 140 n., 144 n., 154 n., 164, 185 n., 186 n., 205 n., 208 n., 221, 229 n., 232 n., 251 n., 270 n., 271, 272 n., 297 n., 303 n.; 17, 39, 106 n., 116, 120, 148 n., 183, 201 n., 231, 233, 298
- Hayek, F., quoted, 267 n.
- Hearings on S. Res. 71: 147 n., 162 n., 173 n., 181 n., 274 n., 329 n.
- Hobson, J. A., quoted, 295 n.
- Income: distribution of, 195; future income as purchasing power, 59
- Inconvertible credit, different from credit, 205
- Inconvertible money, 148, 301
- Industrial risk, 304
- Industries, analysis of, 313
- Inflation, 262, 274, 280, 285, 291, 301, 326; nature of, 103; in a closed economy, 120, 121
- Information, provided by central bank, 327
- Installment selling, 59 n., 64
- Instruments: qualitative, 164; quantitative, 164
- Instruments of control, 162
- Interest rates, 172; and credit policy, 229; as guides, 159; as instruments of control, 162; as a stimulant to credit expansion, 209; effect of rising, 183; effect on capital values, 195, 209; effect on costs, 184, 195; relation to bank rate, 197, 198; relation to bond yields, 199, 200; short term and long term, 199, 200; structure of, 163
- International relations, 124, 161
- International transactions, 188
- Inventory, as a basis for bank loans, 88
- Investing institution, function of, 129
- Investment, 98; as stimulant to prices, 212; equilibrium with savings, 190, 210, 298, 304, 305
- Investment banking, 294
- Investment market, flow of funds into, 210
- Investment trusts, 99, 129
- James, F. C., quoted, 57, 58, 287 n., 96
- Jevons, W. S., quoted, 7, 42 n., 59 n., 95, 111, 124 n.; 17, 51

- Keynes, J. M., quoted, 115 n., 126 n., 129 n., 131 n., 167 n., 168 n., 169, 171 n., 175, 180, 181, 185 n., 186 n., 189, 190, 192 n., 193 n., 194 n., 197, 198, 199, 200, 201, 205 n., 207 n., 209 n., 210 n., 221, 229 n., 230 n., 231 n., 233 n., 243 n., 245 n., 251 n., 252 n., 258 n., 260 n., 265 n., 298, 300 n.; 32 n., 34 n., 35 n., 37 n., 85, 88, 150 n., 151, 174, 191, 195, 204, 211, 212, 222, 250, 259, 263, 300, 304
- Laughlin, J. L., quoted, 31 n., 35 n.
Lavington, F., quoted, 295 n.
Lawrence, J. S., quoted, 172 n., 174 n., 184; 179
- League of Nations (see Report of the Gold Delegation)
- Lending, difference from credit extension, 278, 279, 294
- Life insurance companies, 99, 129
- Liquidation, necessity of, 130
- Liquidity, 94; effect on price level, 131
- Loans: differentiated from credit extension, 53, 54, 96; on securities, 165; types of, 284; unsecured, 286
- London, 189
- London money market, 168, 188
- Lounsbury, R. H., 31 n.
- MacLeod, H. D., quoted, 224
- MacMillan Report, quoted, 133, 150 n., 170, 178, 203 n., 208 n., 209 n., 219 n., 220 n., 222 n., 223, 229 n., 232 n., 257 n., 260 n., 269 n.; 148 n., 162 n., 328 n.
- Madden, J. T., 237
- Managed currency, 233, 276
- Marginal analysis, 183
- Marginal borrowers, 184, 185
- Marshall, Alfred, quoted, 29 n., 32 n., 48; 38 n.
- Maturities, effect of changes in 100, 102
- Media of exchange: and prices, 81, 86, 114; demand for, 40, 138; demand for generally acceptable, 81, 134; supply of, 40, 135
- Mill, J. S., quoted, 32 n., 37, 38, 49, 61, 223 n., 295 n.; 34, 129
- Mills, F. C., quoted, 117 n., 140 n., 151 n.
- Mitchell, W. C., quoted, 113 n., 138 n., 139 n., 191 n.; 158 n.
- Money: debasement of, 226; demand for, 39, 81, 95, 138; fiat, 226; issuing, 99; lack of, 134; problem of, 134; quantity theory, 155; supply of, 37, 81; value of, 81, 149, 150, 156, 258, 266
- Money-lending, 218
- Money market, 93, 159, 161, 166; relation to central bank, 167, 177, 330
- Money-of-account, 114, 115, 116, 121; value of, 137
- Moral suasion, 181
- Mortgages, 98, 129
- Nadler, M., 237
- Nicholson, J. S., quoted, 31 n., 35, 104 n., 137 n.
- Open market operations, 167, 175; as instruments of control, 162; in a depression, 217
- Palgrave, R. H. I., quoted, 55 n., 295 n.
- Peake, E. G., 105 n.
- Phillips, C. A., quoted, 85 n., 274 n.
- Pigou, A. C., 32 n., 148 n., 162 n., 319 n.
- Planned economy, 323
- Political control, 160
- Portfolio of central bank, 219
- Potential credit, 218, 266; defined, 133; effect on prices, 175
- Prendergast, W. A., quoted, 325 n., 284 n.
- Price: fixing, 325; function of, 153; relation to banking policy, 153; relationships, 155
- Price level: and the value of money, 150-156; as a guide, 149, 150, 157, 158, 266; conditions for stability, 190; control of, 154, 221; effected by saving and investment, 190; effect of consumption on, 127, 128; effect of credit on, 81; effect of liquidity on, 131; influence of gold movements, 231; meaning of, 34, 37, 81, 113; problem of, 127, 134; relation to value of gold, 137
- Price relationships, 113, 114, 116; importance of, 185

- Prices: and media of exchange, 114; cause of decline, 140, 223; cause of rising prices, 29, 67; increase of, 135; limits to increases and decreases, 116, 117; maladjustment of, 224; meaning of, 113; relation to bank credit, 99, 134, 204; relation to gold, 116; rising and declining not converse, 204, 211
- Production: as a guide, 149, 156-159; maladjustment of, 224; relation to bank credit, 104; secular growth of, 156, 157
- Progressive rates, 165
- Promissory notes, as media of exchange, 81, 86
- Public works, as cure for depression, 214
- Purchase of securities, by central bank, 217
- Purchasing power: supply of, 39; and credit instruments, 138; creation of, 96; credit the chief form of, 59, 132, 133; of future income, 59; relation to goods, 99
- Qualitative control, 164, 165, 240; essence of, 321; evidences of necessity for, 266; in England, 188; relation to credit rationing, 319; relation to planned economy, 323; relation to quantitative, 304 (see credit control)
- Qualitative instruments, 164; adoption of, 269
- Quantitative control: and credit risks, 305; limits of, 183; paradox of, 267; relation to qualitative, 304; theoretical basis, 149 (see credit control)
- Quantitative instruments, 164
- Quantity theory of money, 30-33, 155, 166
- Rationing: of credit, 319; relation to qualitative control, 319
- Ratios, average, 309
- Real estate, as a basis for bank loans, 84
- Recent events, 248
- Rediscounting, 93
- Rediscount rate, effect of changes in, 169, 173
- Rediscounts, based on condition of borrowing bank, 329
- Reed, H. L., quoted, 156 n., 177 n., 208 n., 220 n., 272 n., 320; 148 n., 160 n., 162 n.
- Report of the Gold Delegation, League of Nations: quoted, 104 n., 224 n., 225 n., 232 n., 263 n.; 31 n., 105 n., 156 n., 231, 258 n., 263 n.
- Reserve base, and credit control, 229
- Reserve requirements, 105
- Reserves: relation to clearance, 215; significance of, 123, 272, 273; use of, 276
- Riefler, W. W., 179 n., 199
- Risk: industrial, analysis of, 208; measurement of, 288, 289, 290
- Risks: four risks of credit, 303; of credit related to quantitative control, 305
- Robertson, D. H., quoted, 205 n., 271 n.; 203 n., 206, 269 n., 299
- Salter, Sir Arthur, quoted, 258; 259
- Saving, 127, 129
- Savings, 130; equilibrium with investment, 190, 210, 298, 304, 305
- Savings bank, 129
- Savings banking, 294
- Savings banks, 99
- Schluter, W. C., 284 n.
- Schwulst, E. B., 284 n.
- Securities: as a basis for bank loans, 84, 280, 291, 306, 312; as collateral, 293; demand for, 129, 130; loans on, 165; prices of, 210; purchase of by central bank, 217; sale of, 123, 166; value of, 130
- Security markets, decline in, 123
- Security prices, 219
- Shipping documents: as a basis for bank loans, 83; as collateral, 284
- Solvency, essentials to, 122
- Spahr, W. E., quoted, 154 n., 182 n., 204 n., 229 n., 267 n.; 148 n., 162 n.
- Specie flow, analysis of, 149
- Statement analysis, 307; relation to credit theory, 287
- St. Clair, O., quoted, 88 n., 99 n., 292 n.
- Steiner, W. H., 284 n., 291 n. (see Willis, H. P.)
- Sterilization, gold, 247
- Stock, 129
- Stock exchange, 93, 163

- Stock market, 150, 165
 Stocks, 98; as basis of bank credit, 312
 Strong, B., quoted, 153; 148 n., 162 n.
 Surplus reserves, nature of, 136

 Taylor, W. G. L., quoted, 42, 51, 94 n.
 Trade: limits to expansion, 140; relation to banking, 118; velocity of, 157; volume of, 156
 Treasury policy, 216
 Tregoe, J. H., quoted, 47, 50, 59, 94, 130 n., 278 n., 298 n.; 51
 Trust, relation to credit, 60
 Trust companies, 99, 129, 294
 Trust receipts: as a basis for bank loans, 83; as collateral, 284

 Unemployment, 128, 222; a cause of, 239

 Unemployment insurance, 216, 217
 United States, recent conditions, 247

 Value of money, conclusions regarding, 132
 Velocity of circulation, 31 n., 33, 204

 Wageman, E., quoted, 132 n., 212 n.
 Wall, A., 284 n., 288 n., 290 n., 303, 307, 309
 Warehouse receipts: as a basis for bank loans, 83; as collateral, 284
 War finance, 148
 Whitney, C., 34 n.
 Whittlesey, C. L., 242 n.
 Willis, H. P., quoted, 39 n., 169, 173 n., 178 n., 329 n.; 33 n., 87, 162 n., 274 n., 330 n.
 Window-dressing, 160

V I T A

THE author was born in Cincinnati, Ohio, February 3, 1903. His early education was received in the public schools and high schools of that city. In 1926, he received the degree of Commercial Engineer from the University of Cincinnati. The studies toward this degree were pursued in the College of Engineering and Commerce under the cooperative plan whereby a variety of business experiences were obtained during a period of five years.

After a year of study in the School of Business, he was awarded the degree of Master of Science by Columbia University in 1928. During the following year, further graduate work was pursued in the Graduate Faculty of Political Science. In the course of these two years, the author took courses given by Professors H. Parker Willis, E. R. A. Seligman, V. Simkhovitch, Wesley C. Mitchell, Frederick C. Mills, James W. Angell, and Dr. Eveline M. Burns. He also attended the seminar conducted by Professors Seligman, Mitchell, and Simkhovitch.

During the academic year 1926-27, the author served as Instructor in Washington and Lee University. From the spring semester of 1928 until the spring semester of 1932, inclusive, he taught the Principles of Economics in the Extension Division of Columbia University. During the academic years 1929-30 to 1932-33 inclusive, he held the position of Lecturer in Banking in the School of Business, Columbia University. He worked for the National Bureau of Economic Research during the summer of 1928, and in the summer of 1930 studied banking practice in a New York bank. He was appointed Assistant Professor of Economics at the University of Rochester, May 11, 1933, to become effective September 1, 1933.