

THE INSTITUTE OF ECONOMICS OF THE BROOKINGS INSTITUTION

The Carnegie Corporation of New York in establishing the Institute of Economics declared:

"The Carnegie Corporation, in committing to the Trustees the administration of the endowment, over which the Corporation will have no control whatsoever, has in mind a single purpose—namely, that the Institute shall be conducted with the sole object of ascertaining the facts about current economic problems and of interpreting these facts for the people of the United States in the most simple and understandable form. The Institute shall be administered by its Trustees without regard to the special interests of any group in the body politic, whether political, social, or economic."

PUBLICATION No. 45

THE BROOKINGS INSTITUTION

The Brookings Institution—Devoted to Public Service through Research and Training in the Humanistic Sciences—was incorporated on December 8, 1927. Broadly stated, the Institution has two primary purposes: The first is to aid constructively in the development of sound national policies; and the second is to offer training of a super-graduate character to students of the social sciences. The Institution will maintain a series of co-operating institutes, equipped to carry out comprehensive and inter-related research projects.

The responsibility for the final determination of the Institution's policies and its program of work and for the administration of its endowment is vested in a self-perpetuating Board of Trustees. The Trustees have, however, defined their position with reference to the investigations conducted by the Institution in a by-law provision reading as follows: "The primary function of the Trustees is not to express their views upon the scientific investigations conducted by any division of the Institution, but only to make it possible for such scientific work to be done under the most favorable auspices." Major responsibility for "formulating general policies and co-ordinating the activities of the various divisions of the Institution" is vested in the President. The by-laws provide also that "there shall be an Advisory Council selected by the President from among the scientific staff of the Institution and representing the different divisions of the Institution."

BOARD OF TRUSTEES

ROBERT S. BROOKINGS	DAVID F. HOUSTON
WHITEFOORD R. COLE	VERNON KELLOGG
NORMAN H. DAVIS	JOHN C. MERRIAM
FREDERIC A. DELANO	HAROLD G. MOULTON
CLARENCE PHELPS DODGE	JOHN BARTON PAYNE
JEROME D. GREENE	LEO S. ROWE
BOLTON SMITH	

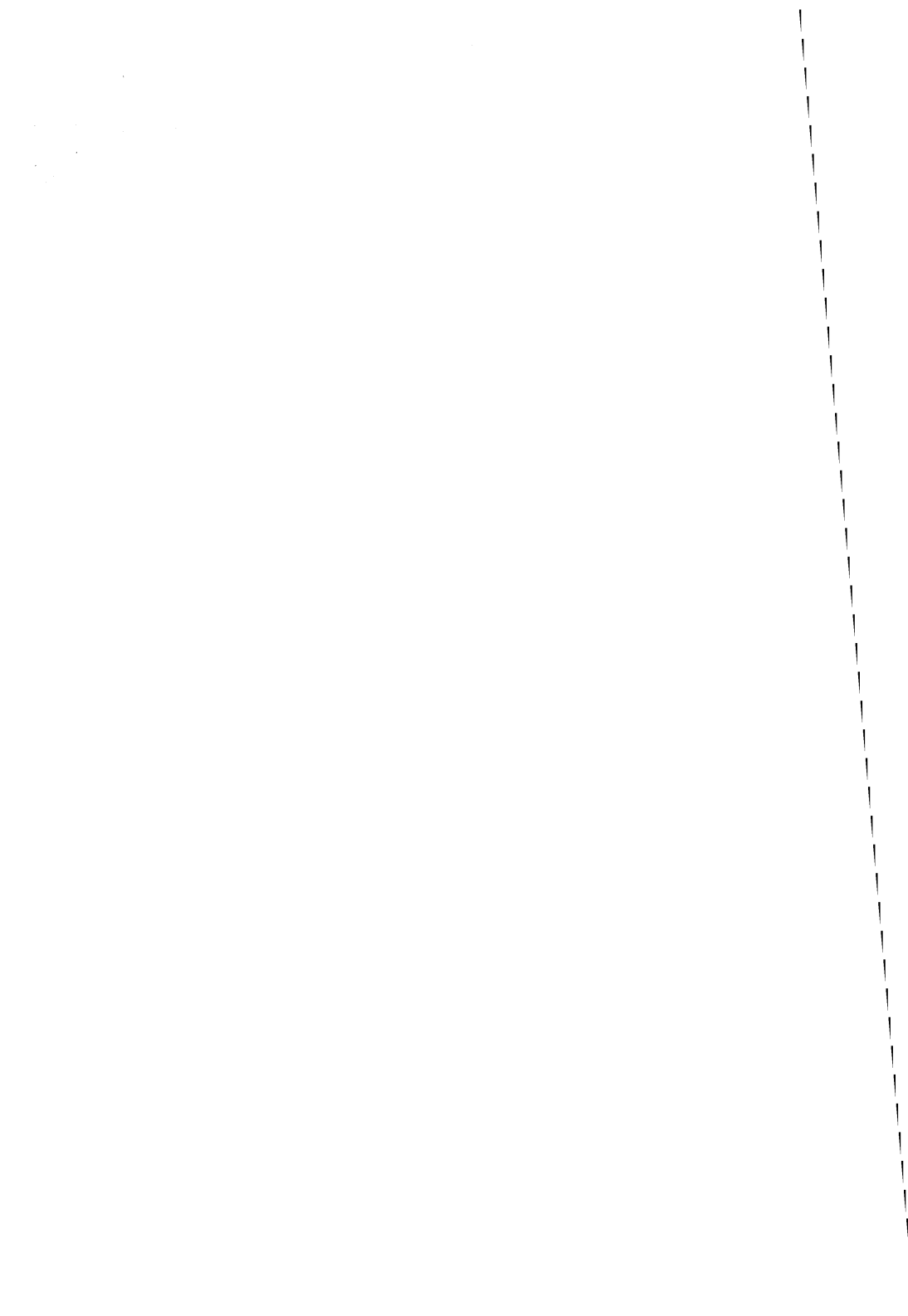
OFFICERS

ROBERT S. BROOKINGS, *Chairman*
LEO S. ROWE, *Vice-Chairman*
HENRY P. SEIDEMANN, *Treasurer*
HAROLD G. MOULTON, *President*
LEVERETT S. LYON, *Executive Vice-President*

ADVISORY COUNCIL (1932-33)

ARNOLD B. HALL	LEVERETT S. LYON
CHARLES O. HARDY	EDWIN G. NOURSE
LEWIS L. LORWIN	HENRY P. SEIDEMANN

**CREDIT POLICIES OF THE
FEDERAL RESERVE
SYSTEM**



CREDIT POLICIES OF THE FEDERAL RESERVE SYSTEM

by

CHARLES O. HARDY

WASHINGTON, D. C.

THE BROOKINGS INSTITUTION

1932

COPYRIGHT, 1932, BY
THE BROOKINGS INSTITUTION

Set up and printed.

Published August, 1932.

Second impression, February, 1933.

Third impression, January, 1934.

All rights reserved, including the right of reproduction
in whole or in part in any form.

Printed in the United States of America by
George Banta Publishing Company
Menasha, Wisconsin

Each investigation conducted under the auspices of The Brookings Institution is in a very real sense an institutional product. Before a suggested project is undertaken it is given thorough consideration, not only by the Director and the staff members of the Institute in whose field it lies, but also by the Advisory Council of The Brookings Institution. As soon as the project is approved, the investigation is placed under the supervision of a special Committee consisting of the Director of the Institute and two or more selected staff members.

It is the function of this Committee to advise and counsel with the author in planning the analysis and to give such aid as may be possible in rendering the study worthy of publication. The Committee may refuse to recommend its publication by the Institution, if the study turns out to be defective in literary form or if the analysis in general is not of a scholarly character. If, however, the work is admittedly of a scholarly character and yet members of the Committee, after full discussion, can not agree with the author on certain phases of the analysis, the study will be published in a form satisfactory to the author, and the disagreeing Committee member or members may, if they deem the matter of sufficient importance, contribute criticisms for publication as dissenting footnotes or as appendices.

After the book is approved by the Institute for publication a digest of it is placed before the Advisory Council of The Brookings Institution. The Advisory Council does not undertake to revise or edit the manuscript, but each member is afforded an opportunity to criticize the analysis and, if so disposed, to prepare a dissenting opinion.

DIRECTOR'S PREFACE

In the post-war period, and especially in the years just preceding the recession of 1929, increasing attention was given to the problem of effecting business and financial stability, and increasing confidence was expressed that the necessary agencies of stabilization were being developed. Among such agencies the Federal Reserve system was generally accorded a prominent place. Although the System was originally conceived chiefly as a means of preventing banking panics and of providing an elastic currency, it came in this post-war period to be looked to by a considerable number of people as an instrumentality for accomplishing business and price stability. The ability of the Federal Reserve system to determine or influence interest rates, to buy and sell government securities in the open market, and to deal in gold was frequently set forth as an influence which should go far toward mitigating or abolishing cycles of business boom and depression.

The Reserve system was still in its formative stages when the World War came upon us, and the war period was characterized by problems of an extreme and specialized character. But in the post-war period there has been considerable opportunity to test the ability of a central banking system in the United States to accomplish the ends of economic stabilization which were hoped for. In the present volume Mr. Hardy deals with the fundamental problems of central banking policy, namely, the purposes which an organized banking system should seek to accomplish, the efficiency of the means which such a system has at its command, and the tests by which it can

gauge the success of its efforts. The rapid changes of national and international conditions since the war have stimulated the process of adapting the Reserve system's machinery to the satisfaction of new needs and of old needs newly recognized. It is hoped that this analysis of post-war credit policies may contribute to a fairer appraisal of the services of the Reserve system as well as of the limitations within which it must necessarily function.

The committee from the staff of the Institute of Economics who served with the director in co-operating with the author in the preparation of this volume included Harold G. Moulton and Frieda Baird.

EDWIN G. NOURSE
Director

Institute of Economics
August 1932

AUTHOR'S ACKNOWLEDGMENTS

The author wishes to thank the many scholars and public officials both in America and Europe who have assisted him in the work of preparing this book. It would make too cumbersome a list to mention them all, and it would seem invidious to make mention only of certain ones. All have contributed generously to his knowledge of the facts and his understanding of the significance of those facts. He can only hope that in not too many cases will they be dissatisfied with the interpretations which he has placed upon the matters dealt with.

CHARLES O. HARDY

CONTENTS

	PAGE
DIRECTOR'S PREFACE	ix
AUTHOR'S ACKNOWLEDGMENTS	xi

PART I. ORGANIZATION AND PRACTICE

CHAPTER I

STANDARDS OF CREDIT POLICY	3
----------------------------------	---

CHAPTER II

THE TECHNIQUE OF CREDIT CONTROL	18
---------------------------------------	----

CHAPTER III

BANKING AND BUSINESS, 1922-31	34
I. Decentralized Credit Control, 1922-23	38
II. Moderate Restraint, April-December 1923	39
III. An Easy Money Policy, 1924	42
IV. A Period of Neutrality, 1925-26	44
V. Easy Money Again, 1927	46
VI. The Attempt to Curtail Speculation, 1928-29	48
VII. The Banks and the Depression, 1930-31	55
VIII. The Crisis of 1931	57

PART II. THE MAJOR STANDARDS

CHAPTER IV

STABILIZATION OF THE MONEY MARKET	63
I. The Tradition of Central Bank Policy	64
II. Temporary Disturbances	66
III. Cyclical Disturbances	71
IV. Gold Movements	72

CHAPTER V

MAINTENANCE OF SOUND CREDIT CONDITIONS	74
--	----

CHAPTER VI

INTERNATIONAL CO-OPERATION	96
----------------------------------	----

CHAPTER VII

THE RESERVE BOARD AND THE STOCK MARKET: THE TECHNIQUE OF CONTROL.....	118
--	-----

CHAPTER VIII

THE RESERVE BOARD AND THE STOCK MARKET: THE OBJECTIVES OF CONTROL.....	148
---	-----

CHAPTER IX

RESERVE CREDIT AND THE GOLD SUPPLY.....	179
I. The Gold Movement and the Volume of Credit.	180
II. Gold Stock and Credit Policy.....	186
III. What Policy Should Have Been Followed?	190

CHAPTER X

STABILIZATION OF PRICES.....	199
------------------------------	-----

CHAPTER XI

EFFICACY OF THE RESERVE SYSTEM'S TECHNIQUE....	227
--	-----

PART III. THE MINOR STANDARDS

CHAPTER XII

LIQUIDITY OF COMMERCIAL BANK ASSETS: THE AC- CEPTANCE MARKET.....	243
--	-----

CHAPTER XIII

LIQUIDITY OF COMMERCIAL BANK ASSETS: ELIGIBILITY FOR REDISCOUNT.....	264
---	-----

CHAPTER XIV

THE FEDERAL RESERVE SYSTEM AND THE TREASURY..	278
---	-----

CHAPTER XV

REGIONAL UNIFORMITY OF RATES.....	292
-----------------------------------	-----

PART IV. THE RESULTS OF CREDIT CONTROL

CHAPTER XVI

THE QUANTITY OF CREDIT: EXCESS OR DEFICIENCY..	311
I. Reserve Credit and Bank Credit.....	314

CONTENTS

xv

II. The Amount of Credit Which a Country Needs	318
--	-----

CHAPTER XVII

THE QUALITY OF CREDIT: LIQUIDITY AND SAFETY...	328
I. The Banker's Viewpoint: Liquidity.....	328
II. The Borrower's Viewpoint: Vested Interests..	337
III. The Depositor's Viewpoint: Bank Failures....	340

APPENDICES

A. STATISTICAL DATA.....	351
I. Reserve Bank Credit and Factors in Changes, January 1, 1922 to June 1, 1932.....	351
II. Gold Imports into and Exports from the United States, by Countries, 1922-31.....	356
III. Discount Rates of Federal Reserve Banks on All Classes and Maturities of Discounted Bills, January 1, 1922 to June 30, 1932.....	358
IV. Reserve Percentage of the Federal Reserve Banks, by Months, 1922-32.....	363
V. Principal Resources and Liabilities of All Mem- ber Banks, on Call Dates, 1922-31.....	364
B. REFERENCES FOR FURTHER READING.....	366
INDEX	373

PART I
ORGANIZATION AND PRACTICE

CHAPTER I

STANDARDS OF CREDIT POLICY

The concept of credit policy is an old one in the history of European banking, but is comparatively new in the United States. Prior to the reorganization of our banking system by the Federal Reserve Act of 1913 there was, practically speaking, no such thing as a credit policy designed to protect the public interest, as distinct from the business policies of individual banks. The banking business had indeed been hedged about by numerous restrictions, covering capitalization, liability of stockholders, reserves, permissible assets, and similar matters. These restrictions were designed chiefly to protect depositors from losses incident to bank failures. They set limits within which the banker was free to manage his business as he pleased under the guidance of the profit motive; they did not create a field for the exercise of administrative discretion in the interest of the public at large.

The Federal Reserve Banks, on the other hand, though owned by the commercial banks, are quasi-public organizations, and their activities are intended primarily to forward not merely the interests of bankers, bank stockholders, and bank depositors as such, but those of the general public. To insure freedom from the control of profit considerations, their dividends are limited and a large share of the responsibility for their actions is entrusted to the Federal Reserve Board, a body appointed by the President and in no way responsible to the Reserve Banks or their stockholders. The government is the residual claimant of the Reserve Banks' profits.

Emancipation from the necessity of earning maximum profits means that the Reserve system either must be given other standards of action or must develop them for itself. The Reserve Act defines the objectives of the management of the System only vaguely. The preamble indicates as purposes of the Act, "to furnish an elastic currency, to afford a means of rediscounting commercial paper, to establish a more effective supervision of banking in the United States." More important, but very indefinite, is the provision of Section 13 that the rates of discount of the Reserve Banks "shall be fixed with a view to accommodating commerce and business." There is, therefore, nothing rigid or automatic in the administration of the affairs of Reserve Banks; in planning the system there was purposely left open the widest scope for the exercise of discretion and the utmost freedom to develop appropriate standards of policy.

The policies pursued by the Federal Reserve Banks and the Federal Reserve Board may conveniently be classified into three groups, which we may designate as banking, service, and credit policies.¹

Banking policy relates to the influence exerted by a Reserve Bank on the loan and investment policies of individual member banks. Primary responsibility for supervision of the practice of member banks rests with the Comptroller of the Currency in the case of national banks and with state banking officials in the case of state banks and trust companies. The law vests in the Reserve Banks authority to make "special" examinations, but this power is seldom exercised and is intended to furnish a check

¹ The distinction between "banking policy" and "credit policy" is taken from *Annual Report of the Federal Reserve Board*, 1928, pp. 9-10.

on reckless and dishonest banking rather than on policies which might have undesirable effects on the general credit situation.

The "banking policy" of the Reserve authorities consists largely in the enforcement of three principles; first, that it is an abuse of privilege to obtain capital by substantially continuous borrowing at a Federal Reserve Bank; second, that a bank should not borrow at a Reserve Bank, even temporarily, merely because it has an opportunity to reloan the funds at a profit; third, that the amount which a bank is entitled to borrow should bear a fair relationship to the amount which it has contributed to the lending power of the Reserve Bank. Occasionally an attempt has been made to enforce a fourth principle, namely that a bank is not entitled to borrow from the Reserve Bank even by rediscounting the best of eligible paper if its intention is to use the funds for purposes deemed to be out of line with public policy.² Banking policy has but little influence on the total volume of credit extended by the Reserve Banks, although as we shall see, efforts have occasionally been made, notably in 1929, to use the instrumentalities of banking policy to influence the general credit situation.

By service policies we mean policies relating to a large number of miscellaneous activities which the Reserve Banks perform, such as fiscal operations for the government, the maintenance of a system of inter-district clearing; the transfer of funds and securities by telegraph; the compilation and publication of statistical data; and the promotion of a system of par collections. Some of these services are of great value, but once they have been set up, their maintenance is delegated to subordinates

² Compare pp. 132-40.

and no longer requires the attention of the policy-making authorities of the Reserve system. None of them except the par collection system involves a controversial issue.

Credit policy has reference to the influence that the Federal Reserve system exerts on the volume of credit, its cost, the kind of business that is financed, and the types of instruments that are used. The determination of credit policy cannot be reduced to routine, for it requires constant reconsideration of the advantages and disadvantages of a liberal or a restrictive policy. It involves consideration of such factors as the state of business activity, the flow of gold into or out of the country, the movement of prices, the effect of the American policies on the money markets of other countries, and the balancing of the relative claims of different parts of the country and of different industries. It is the most difficult and probably the most important aspect of Reserve administration.

In this study our interest is in the objectives which the Reserve system has been trying to attain, the means it has utilized, and the degree of success which it has attained. We shall not be concerned at all with the service policies of the System, and banking policy will be considered only to the extent that the forms of banking policy have been used to control the volume of credit extended.

At the time when the establishment of the Reserve system was being considered, students of banking theory had been pointing out for years the advantages of the European system of centralized reserves, centralized note issue, and rediscount of commercial paper. Nevertheless, in spite of the fact that the European system seemed to work more smoothly than ours, there existed

in America a profound distrust of the whole idea of central banking. The problem of reforming American banking was largely one of getting the advantages of unified credit policy without loss of local freedom, or, if that was impossible, without overt acknowledgment of centralization of power. The Aldrich plan of 1911 offered central banking under a very thin disguise. The revulsion of sentiment in 1912 against the general policies of the eastern financial groups for whom Senator Aldrich was spokesman increased the necessity for sugar-coating the dose of central banking which experts agreed in prescribing.

The Democratic Party came into power in 1913, pledged against either a central bank or a central reserve association. The Federal Reserve Act, with its provision for twelve independent banks and a central supervisory body, reflects in part a genuine attempt to retain both the advantages of unified policy and those of local freedom; in part the necessity of making the actual centralization as unobtrusive as possible.

Like all paper constitutions, the Federal Reserve Act has grown and changed by a process of interpretation, administration, and the accumulation of precedents. In general, as with the Constitution of the United States, the drift has been toward centralization of the policy-making power. More and more the individual Reserve Banks have come to be administrative agencies performing important services in the supervision of the practice of individual banks, the routine of bank operation, and the performance of service functions, but entirely subordinate to centralized control in matters of credit policy.

So complete has the centralization of credit policy

become that we are quite justified in treating Reserve system administration as a case of central banking. The credit problems faced by the Federal Reserve Board and other influential elements in the system are of the same character as those which confront every important central banking system, and the instruments at hand for executing those policies, though administered by twelve separate banks, are precisely the same as the instruments at the command of every central bank. We shall therefore draw freely on European experience with centralized control of banking in forming our judgments as to the desirability and feasibility of the objectives which seem to have controlled the Federal Reserve system, and the effectiveness of the devices which it has employed.

We shall pay little attention to the details of the history of Reserve banking during the years before 1922. For the first two years of its existence the Reserve system operated under conditions which gave it but little opportunity to exercise an important influence over the policies pursued by its members; for the next two years it functioned as an agency of war finance. For more than a year after the Armistice the exigencies of Treasury financing prevented the development of a credit policy aiming at economic as distinguished from fiscal objectives; then after a few months of experimentation there ensued a great liquidation of bank credit. While this was in progress it made very little difference what lines of policy the Reserve system might choose to follow. Only since the completion of this liquidation movement, early in 1922, has there been a real opportunity for the development of a consistent program of bank credit control.

We stand now at the close of a ten-year period in which there has been a fair degree of permanence in the personnel of the Reserve authorities; and one in which they have had a large degree of independence in their policy. The most important task undertaken during this period has been the formulation of a credit policy; we undertake in this volume to estimate the progress which has been made in its accomplishment. For this purpose we shall survey the standards which the Reserve system has set up for its own guidance, comparing official statements of objectives aimed at with the record of actual performance; estimate the success of the system in accomplishing the purposes at which it has professed to aim; and offer an appraisal of the standards themselves, in terms both of the desirability of the objectives sought and of the practicability of their attainment.

A central banking system may take either a passive or an active attitude toward the money market. It may consider that commercial banks are primarily responsible for determining the total amount of credit needed by the country and its best allocation to different uses, and that its own business is merely to facilitate the adjustment of the supply to the changing needs of trade and the flow of funds to the regions which need them most. This was undoubtedly the dominant strain of thought in the planning of the Federal Reserve system. It was phrased as the quest of an elastic currency, and directly expressed in the injunction that the Federal Reserve Banks should fix their rates "with a view of accommodating commerce and business."⁸ This view-

⁸ This is, of course, in substance the position of the Banking School in the British banking controversy of the early nineteenth century.

point has found expression in repeated statements of Federal Reserve policy.⁴

The other strain of thought which runs through the literature of the Reserve system is a philosophy not of accommodation but of control. It assumes that the demand for credit is not an independent norm, but a consequence of the policies of those who are responsible for the supply; that the amount of credit which will be used is a function of the price level and of the state of business activity and that these are in turn a function of the supply of credit.⁵ This line of thought also runs very far back in the history of banking theory, and is another important element in the background of the formation of the Reserve system. It has had a greatly increased influence in the post-war era and has been accepted by Reserve authorities as justifying repeated departure from the passive attitude which it has usually maintained.

There is, of course, no necessary conflict between these points of view. It is not *a priori* improbable that there will be some fluctuations in the demand for credit to which the Reserve system can best respond in a passive way by altering its outstanding credit as the

⁴“ . . . When increased credit demands can be met only by recourse to the Federal Reserve Banks, the volume of Reserve Bank lending is a sensitive indicator of credit conditions. . . .” (*Federal Reserve Bulletin*, 1923, Vol. 9, p. 411).

“ . . . It is this responsiveness of the volume of currency in use to the public's requirements and the promptness with which the net volume of inflow or outflow of currency of all kinds at the Reserve Banks responds to changes in the demand for cash that constitutes the elastic character of the currency under the Federal Reserve system.” (*Annual Report of the Federal Reserve Board*, 1924, p. 7. Compare also *ibid.*, 1927, p. 9, and *Federal Reserve Bulletin*, 1925, Vol. 11, p. 1; 1929, Vol. 15, p. 529, and 1931, Vol. 17, p. 495).

⁵*Annual Report of the Federal Reserve Board*, 1923, p. 10 (quoted below, pp. 79-80); *Federal Reserve Bulletin*, 1928, Vol. 14, p. 6.

demand expands or contracts, and other types of change which it ought to resist or promote. And this is what we find to have been the view of the Reserve authorities. They have interpreted the problem of credit administration as consisting largely in distinguishing between those changes in the demand for Reserve credit which can be accepted as evidences of a change in actual needs, and those which reflect the development of an unwholesome tendency toward a dilution or a concentration of circulating medium.

According to pre-war traditions the most important index of credit conditions was the flow of gold into and out of a country's bank reserves. This was true both of countries like the United States and Canada which had no central banking authorities and of countries where central banks were charged with responsibility for the maintenance of sound credit conditions. In countries where there was no central bank, the effect of outflowing and incoming gold was automatic; an outflow of gold forced banks to curtail their loans or their investments and to raise the interest rate, and an inflow, under the pressure of competition, automatically brought about greater monetary ease.⁶ In countries with active central banks, however, the effect of the gold movement was modified by administrative action.

Orthodox central bank policy, under the pre-war gold standard, hinged on gold movements, but required the use of judgment as to the causes of such

⁶ The omission of reference to price changes in the text is intentional and without prejudice. I believe that there is need of a thorough re-examination of the orthodox statement of the influence of gold movements on price changes and the extent to which in pre-war days changes in price levels were caused by gold movements and operated to check the gold movements.

movements. The crucial question was whether the outflow or inflow was due to a temporary situation which would presently correct itself, or to a maladjustment between the volume of credit and the needs of trade for credit which, if unmolested, would grow cumulatively greater until checked by the depletion of the reserves.

For example, if it appeared that a gold outflow was due to a mere seasonal strain which carried no threat of future trouble, or to a financial crisis abroad, the central bank would put credit into the market by purchasing bills or government securities to offset the loss of gold, and withdraw it again when the strain was past. On the other hand, in cases where the pressure appeared to be due to speculative expansion of credit on the part of commercial banks which threatened to grow cumulatively greater, sound policy required the central bank to tighten the market without waiting for the movement to deplete the reserves and thereby compel contraction. In the one case the objective was to enable the commercial banks to ignore the gold movement; in the other case it was to hasten the contraction of credit which must result from the outflow of gold and thereby to shorten the period of adjustment.⁷

Vice versa, if a gold inflow was due to seasonal conditions and hence was not likely to last long, central banking policy aimed to prevent this reserve from being built into the credit structure through an expansion of credit operations. But if it was believed that an inflow was the result of a balance of payments favorable

⁷ For fuller discussion of these points, see Chap. IX; compare also B. H. Beckhart, *The Discount Policy of the Federal Reserve System*, Chap. II.

for more permanent reasons, approved central banking policy was to permit the increased stock of gold to support an increased supply of credit.

Without a central bank, the decisive factor determining the effect of a gold inflow or outflow on the money market was the more or less accidental amount of slack in the reserves; with a central bank the crucial question was not the size of the reserves but the cause and the anticipated duration of any flow of gold into or out of them. Loss or gain of gold was regarded as a symptom of the state of the balance of payments rather than as a thing of immediate importance on its own account. To operate in this way it was necessary that the central bank be governed by consideration of public welfare rather than of private profit. Particularly essential was it that such a bank should sacrifice potential profit by carrying at most times an unproductive surplus reserve.

Under the old national banking system of the United States there was practically no surplus reserve which could be used as a buffer to break the force of gold movements, or to obviate them. The country banks carried their reserves largely in the form of deposits with the central reserve city banks, while the latter carried their reserves in gold and legal tender. If the country banks endeavored to withdraw their balances from the city banks the city banks' reserves were depleted and those of the country banks were not correspondingly increased—since cash in the vaults of the country banks counted no more as reserves than did the corresponding deposits in the city banks. Since neither the country nor the city banks carried excess reserves, there was prac-

tically no true reserve at all—that is no reservoir of funds which could be drawn upon for seasonal and emergency needs.⁸

Before 1913 no one had a financial incentive to exert a stabilizing influence on credit movements. If all the banks, or all the central reserve city banks, could have agreed to maintain excess reserves in times of seasonal slackness, they would have avoided much of the strain in times of seasonal pressure, and presumably in the slack season they would have obtained some compensation in the form of higher rates for what they would have lost through the restriction of the volume of their loans. But no one bank could do this alone—it would have had to carry all the costs while others got the principal benefit. What was needed was some form of organization to compel all the banks to share the cost of carrying idle reserves in slack times in order that they might be available in times of need. This is the most important service performed by central banks, and the fact that we had no organization which could perform the function constituted the most forceful argument for a reform of the banking system.

The creation of the Federal Reserve system provided the United States with the mechanism necessary for the exercise of both these types of control—the offsetting or prevention of temporary gold movements by credit expansion or contraction, and the stabilization of credit conditions by operations designed to check credit booms before they ran so far that the condition of the

⁸ The cash balance carried in the United States Treasury was occasionally drawn upon to meet seasonal or crisis demands, either through the depositing of funds in banks or through the purchase of bonds by the Treasury, but the device was very crude and there was no continuity of policy in its management.

reserves made further expansion absolutely impossible. In the first of these tasks, as is shown in detail in Chapter IV, the Reserve system has been highly successful and its operations have given rise to little controversy; the second task has presented greater difficulties and here there is much difference of opinion as to the value of the System's achievements.

In early post-war years the inflow and outflow of gold did not serve as a satisfactory guide to central bank policy. During the early post-war era of irredeemable paper currencies and government control of money markets the central banks of the world had to devise new standards of policy because the old test, the gold flow, broke down completely. It broke down first because it was not allowed to operate at all. Gold embargoes isolated each country's stock of gold and made it useless, except for show purposes. When the embargoes were lifted, gold movements did not at once begin to function in the old way, because wherever the currencies were irredeemable the power of the banks to extend credit was not seriously affected by an inflow or an outflow of gold. Under these circumstances new tests had to be developed; and the discussion of tests has drawn attention to the more important question of the objectives to be aimed at.

A great variety of objectives have been suggested as proper criteria of Federal Reserve credit policy. Even before the situation arose which made it impossible, without great danger of inflation, to abide by the principle that credit can be safely expanded so long as gold flows in, there was a wide divergence of opinion as to the objectives which the Reserve system ought to promote and the specific policies by which these objectives

could best be attained. Without attempting an exhaustive list of the aims of credit policy, the following important suggestions may be noted:

1. The prevention of panics. At the time when the Federal Reserve system was created, this was unquestionably the most important objective in the minds of the framers and of the American public.

2. Stabilization of business conditions. This is the modern counterpart of the prevention of panics. Whereas in the pre-war period attention centered on the conspicuous breakdown of financial machinery which often ushered in a period of depression, post-war theorizing runs in terms of the business cycle; that is, a more or less continuous alternation of expansion and contraction of business activity in which the panic or financial crisis is only a single stage and one which does not always appear.

3. Stabilization of the price level. The demand for stabilization of price levels is in part a special form of the quest of a panacea for business fluctuations, and in part a reaction against the evils associated with long-time trends of rising and falling prices.

4. Stabilization of the money market itself, particularly with reference to seasonal changes and temporary disturbances such as those connected with quarterly Treasury operations.

5. Assistance to Europe in the establishment and maintenance of stable currencies.

6. Keeping money as cheap as possible for "legitimate" commerce, industry, and agriculture.

7. The prevention of stock speculation and of speculative absorption of funds which might otherwise be available for other uses. In part this is a variant of the

preceding point; in part it is a special aspect of (2) above; and in part it is an expression of hostility to the stock exchange on moral grounds.

8. Helping the Treasury borrow on advantageous terms. This was admittedly the primary objective of Reserve policy during the war and during the first year after the Armistice. We shall attempt in Chapter XV to answer the question whether it has dominated Reserve policy in more recent years.

9. Reform of the standards of bank practice through the encouragement of the use of certain types of credit instruments, especially short-term commercial instruments as opposed to investment in securities and lending on stock market collateral.

In Parts II and III we undertake to show what has been the importance of these various suggested objectives in the development of the standard of the Federal Reserve system, comparing the actual record of practice with statements of policy which have been issued in reports and bulletins of the Board and the Reserve Banks, and in public utterances of Reserve officials. As a preliminary to the survey we describe in Chapter II the mechanisms by which Reserve authorities attempt to influence the credit policy of member banks, and in Chapter III we sketch the history of Reserve credit operations during the years since 1921.

CHAPTER II

THE TECHNIQUE OF CREDIT CONTROL

In this chapter we sketch the technique used by the Federal Reserve system to influence the level of short-term money rates, the movement of gold into and out of the country, the volume of credit extended to the banks by the Reserve system, and the amount and form of credit operations of the member banks themselves. Our purpose is not at this point to appraise either the effectiveness of these methods, the soundness of the theories which underlie them, or the desirability of attainment of the ends which have been sought; questions of this character will be considered after we have surveyed in detail the attempts of the Reserve Banks and the Reserve Board to exercise a beneficent influence over the short-term money market.

The Federal Reserve system has used some of the well-known techniques which were developed in the pre-war experience of European central banks, and has also worked out some new techniques by study and experiment. The necessity for innovation arose partly from the fact that the organization and practice of the American banking system are somewhat different from those with which European banks have had to deal; partly from the fact that objectives of banking policy have changed everywhere since the war, especially in the direction of greater interest in the stabilization of business activity; and finally from the fact that in the post-war era a new set of specific issues have pressed for solution.

During the years since 1921 the Federal Reserve

system has used four principal devices which are intended to influence the lending and investment policies of the member banks, through their effect on the degree of ease or tension in the short-term money market, and through this factor in turn to influence the state of commerce, industry, and agriculture. The first, and by far the most conspicuous, channel of influence is the determination of the cost of Reserve credit to the member banks; the second is control of the form in which Reserve credit is extended; the third is the issuance of warnings and propaganda directed to securing voluntary co-operation of member banks, and of the financial community; the fourth is "direct pressure"—the denial, or the threat of denial, of credit to member banks whose policies are disapproved by Reserve authorities.¹ In this chapter we shall be concerned chiefly with the first of these channels of influence; we shall revert briefly to the others after analyzing the way in which the Reserve Banks exercise a direct influence on the cost and abundance of credit.

The possibility of any centralized control of a money market hinges on the extent of dependence of the commercial banks on the credit policy of the central bank, a dependence which is somewhat closer in America than in most other countries.

Member banks operate under rigid reserve requirements. These requirements are based on the volume of deposits, 3 per cent in the case of time deposits, and

¹ A fifth possibility, which has been utilized by central banks in Europe but not by the Federal Reserve system, is restriction of the total amount of outstanding central reserve credit to a fixed figure, coupled with a system of allocating this amount among applicants at an arbitrary rate. In the years from 1920 to 1923 under the Phelan Act four Reserve Banks made use of a sliding scale of rates, which amounted practically to a credit rationing system.

7, 10, or 13 in the case of demand deposits. The average requirement for all deposits is between 9 and 10 per cent. These reserves consist entirely of deposits to the credit of member banks on the books of the Federal Reserve Banks. Even gold in a bank's vault does not count, though of course it can be turned into reserve at any time by depositing it with the Federal Reserve Bank. The legally required reserve can be drawn upon temporarily if the demands of depositors for cash prove greater than anticipated, but it must be replenished immediately; it cannot be reduced for more than a few days except in proportion as the deposit business of the bank is liquidated.²

The administration of a commercial bank involves constant readjustment of the reserve ratio. Practically every transaction which passes through a bank's books involves a change either in its actual reserves or in its reserve requirements. A bank may find itself short of reserves because it has to meet an unexpected volume of withdrawals of deposits in the form of cash; it may have to meet an adverse balance at the clearing house because its clients are transferring their accounts to other banks; it may even have a shortage without serious withdrawals simply because it has created an excessive volume of deposits by lending operations and has not provided reserves against the new liabilities. Vice versa, a bank may find itself in possession of excessive reserves either because it has received fresh deposits or because its clients have liquidated part of their indebtedness.

² It follows that any reduction in the required reserve ratio or the payment of interest by the Reserve Banks on the member banks' reserves would amount to a donation to the member banks of a new body of earning assets. Conversely, an increase in the reserve requirements would deprive the banks of an income which they now enjoy.

It is an important task of the management of every bank to see that reserves do not fall below the legal minimum, or exceed the legal minimum by such amount as to involve a material loss of income. The reserve deposits earn no interest, and of course cash in vault also earns nothing; hence in normal times member banks carry practically no surplus reserves for seasonal needs or for emergency use. Instead they rely on their secondary reserves—call loans, deposits with correspondents, salable securities—and on the facilities of the Reserve Banks.

A shortage or surplus in the reserve of an individual bank is ordinarily taken care of in ways which do not change the total supply of credit. A bank which is short of reserves may get help from other banks either by drawing down its balances with correspondents, by direct borrowings from other banks, by selling securities to banks or to persons who borrow from banks in order to pay for them, or by calling loans which are then taken over by other banks. Likewise a surplus in one bank's reserves is quickly eliminated, either by purchases of securities, by direct interbank lending or by the making of open market loans. Such operations, in so far as they merely shift the credit load around from one bank to another, do not change the relation of reserves to deposits for the member banks as a whole. They do not create a major problem of Reserve system administration, though at times the Reserve Banks intervene to stabilize the market against disturbances which result from major shifts of funds between country and city, or from one section of the country to another.

An important function of the Reserve Banks relates to the adjustment of the total volume of reserves of the

member banks to changes in money market conditions. The shifting process just described is, of course, of no help in cases where the excess or deficiency of reserves arises from conditions which affect all the banks alike. The most important function of the Reserve system is, on the one hand, to supply needed elasticity in the total quantity of bank reserves and of currency; on the other hand, to prevent elasticity from becoming merely an opportunity for alternations of unnecessary and harmful expansion and contraction.

A general excess or deficiency of member bank reserves may arise in any one of several ways. For example, any of the following changes, if not offset by a change of opposite character, will reduce the proportion of reserves held to reserves required by the banks as a group, though not all banks will be affected:

1. A general expansion of credit by the member banks, which directly lowers the reserve ratio because it increases deposits and does not correspondingly increase reserves.

2. An increase in the demand of the public for currency. When a customer of a bank checks out cash in significant volume the bank's stock of till money must be replenished by drawing against reserves. The deposit liabilities of the bank are reduced, but the total amount of its reserves is reduced by the same amount; hence the reserve ratio is impaired.

3. An export of gold. This operates in exactly the same way as an increase in the currency requirements of the public, since the only way banks can supply their customers with gold for export is by drawing against their reserve balances at the Federal Reserve Banks.

4. The sale by the Federal Reserve Banks of their holdings of United States government securities. The checks in favor of the Reserve Banks drawn by purchasers of such securities are charged directly against the reserve balances of the banks on which they are drawn, and do not create offsetting credits elsewhere.

5. Very similar to the case just mentioned is that of a reduction of the Reserve Banks' investment in bankers' acceptances (which is brought about, in practice, not by selling, but by failure to replace acceptances at maturity).

6. A reduction in the total amount of member bank borrowing at the Reserve Banks. Checks drawn by the member banks in payment of loans are charged directly against their reserves and there is no offsetting expansion.

7. A transfer of funds on government account from member banks to Federal Reserve Banks.

8. A transfer of foreign-owned deposits from member banks to the Reserve Banks.

9. An increase in the capital of the Reserve Banks.

10. Theoretically, a transfer of funds from time deposits to demand deposits, or from banks with low reserve requirements to those with high requirements.³

The last four possibilities are of minor importance. The first three constitute the important problems with which Reserve administration has to deal.⁴ A business boom is usually characterized by all three of these

³ Neither of these shifts has ever occurred in significant volume, but a tendency for time deposits to expand relatively to demand deposits was for many years an important factor making for ease in the money market.

⁴ Currency expansion may also characterize a depression if confidence in the banks is undermined, as in 1931.

changes, and it is through the handling of such situations that the Reserve system becomes involved in responsibility for influencing the pace of business activity. A boom is always characterized by an expansion of bank credit in excess of the ordinary year-to-year growth, and usually by some increase in the demand for currency above normal requirements. Unless a boom is world-wide it is likely to result in an outflow of gold from the countries which are expanding credit—though many other factors enter into the determination of the gold movements. These three phenomena, especially the last two, compel the banks to seek credit from the Reserve system and give the System its opportunity to exercise a restraining influence.

In the converse case, when reserve requirements are contracted because of liquidation of credit, and especially when reserves are being replenished by gold imports or the return of currency from circulation, the Reserve Banks lose in influence. They can make Reserve credit cheaper at such times in the hope of checking liquidation, but they have no weapon against deflation which is as drastic as is an actual restriction of credit or the raising of discount rates to panic levels.

A demand for additional member bank reserves can be met in several ways, only two of which are of major significance. The fourth, fifth, and sixth items given on pages 22-23, with the reverse operations, constitute the machinery of credit control. Practically speaking, for member banks to increase their reserves, either funds must be obtained from abroad or Federal Reserve credit must be expanded. Expansion may be effected through an expansion of member bank borrow-

ing or through expansion of the Federal Reserve system's holdings of acceptances and government securities.⁵ The release of cash from the United States Treasury affords a possible channel of relief, which was important before the Federal Reserve system was established, but is no longer significant.

Credit is obtained from abroad by selling securities, by decreasing short loans to foreigners, and by drawing down balances in foreign banks. Credit thus obtained is converted into reserve balances by importing gold and depositing it in the Federal Reserve Banks. Excessive reserves may of course be utilized by the reverse operations. In so far as needed reserve expansion and contraction is obtained in this way, the operation of our banking system is essentially the same as it was before the banking reform of 1913. Gold came in when money was tight and flowed out when it was easy. The creation of the Federal Reserve system did not impair the effectiveness of this method of adjusting the position of the banks to changes in the credit demands of the country, though the war and the post-war monetary disturbances did practically eliminate it for a number of years. What the new system did was to introduce as an alternative method the expansion and contraction of Federal Reserve Bank credit. The difference in the results of the use of the two methods lies in their effect, not on the reserve position of the member banks, but on that of the Federal Reserve Banks. But, as is shown else-

⁵ Conceivably credit could also be obtained from banks which are not members of the Reserve system, but the reserves of the non-member banks are largely deposits with the member banks themselves. Moreover, the non-member banks are sure to be under pressure to increase their own reserves at the same time as are the member banks.

where, since 1921 the reserve ratios of the Reserve Banks have been so far above legal requirements that changes in them have not been important factors in determining credit policy.

The Federal Reserve system influences the supply and price of credit through rediscount rates and through open market operations. Rediscounting, as the term is generally used, covers two types of borrowing transactions, namely, rediscounting in the strict sense of the term, in which the member bank brings to the Reserve Banks eligible commercial paper (acceptances and customers' notes) and discounts it, incurring as endorser, of course, a contingent liability; and, second, direct collateral loans extended by the Reserve Bank to the member bank, occasionally secured by pledge of eligible paper, but usually by obligations of the United States government. The rate at which loans of these two types are extended is known as the rediscount rate and is usually uniform for all types of eligible paper, though at times in the past preferential rates have been given for certain maturities and for types of paper which it was desired especially to encourage.

The second type of credit transaction in which the Reserve Banks regularly engage is the purchase and sale of United States government obligations, chiefly United States Treasury certificates and notes. These operations differ from the rediscounting operations in that they are undertaken on the initiative of the Reserve Bank, whereas rediscounts are made on the initiative of the member banks. The Reserve system has the right to refuse to rediscount eligible paper, and has occasionally exercised that right either because the bank which requested rediscounts was considered to be borrowing too

heavily or too steadily or, more rarely, because the bank's lending practices were disapproved.

In the case of the purchase and sale of government paper, the so-called "open market operations," the practice is entirely different. The Reserve system management decides on the amount which is to be carried; then the necessary securities are bought or sold at market prices.

Open market purchases put additional reserves into the possession of the banks of the country as a whole, but do not give the Reserve Banks any control over the allocation of the new funds to different banks. Rediscounts, on the other hand, put new reserves into the possession of the banks which ask for them, presumably those which have found themselves short. But credit flows from bank to bank so readily that the effect on the money market of an increased volume of rediscounting is not essentially different from that of increased open market purchases of securities.

The purchase of acceptances is intermediate in character between rediscounting and open market purchases of securities. In pursuit of a policy of encouraging the use of the bankers' acceptance,⁶ the Reserve Banks stand ready to purchase eligible acceptances both from member banks and from acceptance dealers, at published rates. Such purchases are ordinarily referred to as open market operations, but the use of the term in this way is somewhat misleading, since the purchases are at the initiative, not of the Reserve system, but of the financial community. In this respect they are like rediscounts.

On the other hand, the sale of acceptances to the Re-

⁶ Compare Chap. XII.

serve Bank puts a member bank in possession of credit without causing its name to appear as a borrower and therefore without any question as to whether the selling bank is appropriating more than its share of the total supply of Reserve Bank credit. In this respect, acceptance purchases are analogous to dealings in securities rather than to rediscounting.

The holdings of acceptances are subject to well-marked seasonal fluctuations. The market supply of acceptances, especially that of cotton bills, increases rapidly in the autumn, and this expansion coincides with an increase of the demand of the country for currency. Cash withdrawals deplete member bank reserves; the expansion of credit required to replenish them is conveniently effected by Reserve Bank purchase of the expanded supply of acceptances.

If open market holdings are not changed, a curtailment of rediscounting, whether stimulated by rate increases or otherwise, can only occur if the banks secure gold from abroad to replace the rediscount credit in their reserves or if there is a general reduction of the amount of bank credit in use in the country.

To a large extent the various types of reserve credit are supplementary. If the Reserve Banks increase their open market purchases without lowering the rediscount rates, much of the credit which they put into the market is quickly cancelled because member banks use the new resources to pay off their indebtedness. Vice versa, when securities are sold, an increase in rediscounting follows promptly.

Existing member bank reserve funds have been created in large part through Reserve Bank loans and investments. When a Reserve Bank buys a bond (or for

that matter any other asset) from a member bank or from a customer or correspondent of a member bank, it creates a deposit credit which is just as good a reserve as if it had been created by the deposit of gold. The same thing happens, of course, when a Reserve Bank makes a direct loan to a member bank. Such operations account for a very large fraction of the existing mass of member bank reserves. For example, on December 26, 1923, the loans and investments of the Reserve Banks amounted to 69 per cent of the member bank reserves; on June 30, 1926, the proportion was 52 per cent; on November 6, 1929, it was 64 per cent; and at the end of 1931, 94 per cent.⁷ Thus, if the Reserve Banks should sell out their investments and call in their loans, more than half the member banks' reserve deposits would be cancelled. This would necessitate the cancellation of many billions of dollars of bank credit, or an enormous import of gold.

The fact that maintenance of the present volume of member bank credit requires continuous use of a considerable volume of Reserve Bank credit⁸ gives the Reserve system its control over member bank expansion. If there were no Reserve Bank credit; if the only member bank reserves were those created by the deposit in the Reserve Banks of gold and legal tender, the mere custody of the reserves would not give the Reserve authorities any power whatever to control credit. If the Reserve Banks are to exercise any control over either the volume or the quality of the credit extended by the banks, it is essential that they shall have power to enlarge and con-

⁷ This figure is abnormally high, being affected by the great increase in the country's use of currency in the last half of 1931.

⁸ Not, of course, continuous use by the same borrower.

tract the reserve resources of the member banks through credit operations. It is equally essential that they shall not, except as a last resort, cut their own reserves close to the legal limit. If they utilize their power of expansion up to the limit, they are in the same position as were the commercial banks before the Reserve system was established. They are not free to expand or contract as they may consider the public interest demands; they are controlled by the necessity of protecting their reserves.

While the System during the past ten years has not encouraged such an extensive use of Federal Reserve credit as to bring its own reserve ratio down near the limits fixed by law, it has created a situation in which the member banks cannot stand on their own feet without substantial use of Federal Reserve credit, even in times of slack demand for funds. An enormous volume of Federal Reserve credit was manufactured during the war, and the liquidation movement of 1921 stopped with over a billion dollars still outstanding. Since that time, aside from a peak in December which was due to a seasonal increase in the use of currency, the amount has generally ranged from 850 million to a billion dollars in dull years, and from 1200 to 1400 million in good years.⁹

The ability of the Reserve Banks to influence the money market depends on the size of their surplus reserves as compared with the resources of the member banks. As we have noted, the fact that the Reserve Banks are the custodians of the member bank reserves is of no consequence (except as a way of compelling member banks to bear the expense of running the Re-

⁹ Compare chart, p. 35.

serve system). Reserves are created and cancelled by operations which could be carried out just as well if the custody of reserves were transferred elsewhere. If some multi-millionaire should be seized by a desire to exercise the function of control, he need only accumulate a fund of half a billion dollars, convert it into gold when he wished to tighten the money market, and invest it in high-grade bonds and commercial paper when he wished to create greater ease. By selling out his securities and taking the proceeds in gold, he could exercise as great a restraining influence on credit conditions as can the Reserve system with a similar expenditure, and by purchases of securities he could ease the situation equally well. To be sure, the Reserve Banks within the limits of their resources could offset the effects of his operations, but it is equally true that within the limits of his resources he could offset the effect of theirs. Victory in such a struggle, in the absence of interfering legislation, would be altogether a matter of the relative size of the resources at the command of our Cræsus and of the Federal Reserve Banks. The dominance of the Reserve system—and the same point applies to the central bank of any country—rests entirely on the fact that it commands the only important body of funds which is alternately immobilized and invested without regard to the pecuniary gains and losses which result from such procedure.¹⁰

¹⁰ The possibility of temporary nullification of a central bank's control through the mobilization of fresh resources is illustrated by an action of the Midland Bank, which in 1927 bought securities so heavily as to lower its own reserve ratio by several per cent. The amount involved was small enough so that the Bank of England was able to offset it. The net result was simply to increase the earning assets of the Midland Bank and decrease those of the Bank of England; not to ease the market.

Reserve Banks can exert some influence by manipulating the form of Reserve credit. Shifts between open market holdings and rediscounts do not affect the total volume of credit, but they are an instrument of credit policy because of the existence of a tradition against continuous borrowing. Under our pre-war banking system, individual banks made good their deficient reserves by borrowing from correspondents, but such borrowing was generally regarded as a sign of weakness; hence banks were reluctant to show borrowings on their balance sheets. The discounting of customers' paper was especially in disfavor. Under the new system for a time there was an effort to uproot the tradition and teach the banks to rediscount as a matter of routine, but in recent years the official doctrine has been that banks should rediscount only to make good temporary deficiencies in their reserves and should not obtain capital by continuous rediscounting even though the rates are so low that it is profitable to do so.¹¹

To the extent that the prejudice and the official propaganda against borrowing is influential, the significance of rate policy is decreased. The rediscount rate would cease to count for anything if the prejudice should become strong enough so that any bank would immediately curtail its operations rather than remain in debt to the Reserve Bank, or to other banks which might serve as intermediaries between the ultimate borrower and the Reserve Bank.

On the other hand, the effectiveness of open market operations as an instrument of control over the banks is increased by the tradition against borrowing. When the Reserve Banks sell securities, if the member banks

¹¹ Compare p. 231.

are unwilling to rediscount they must curtail their own credit operations or else borrow abroad; and when the Reserve Banks buy securities the operation has much more tendency to ease the market if there are virtually no rediscounts to be paid off than is the case if banks are getting a considerable proportion of their resources directly from Reserve Banks.

Finally, the Reserve system as a last resort can bring its influence to bear directly by exercising its discretion in refusing to lend to banks of whose policies it disapproves, or by discriminating against certain types of paper when offered for rediscount, even though they are technically eligible. For example, in 1929 some Reserve Banks curtailed credit extended to banks which were making call loans on the stock exchange. This phase of Reserve system policy is discussed in Chapters VII and VIII.

CHAPTER III

BANKING AND BUSINESS, 1922-31

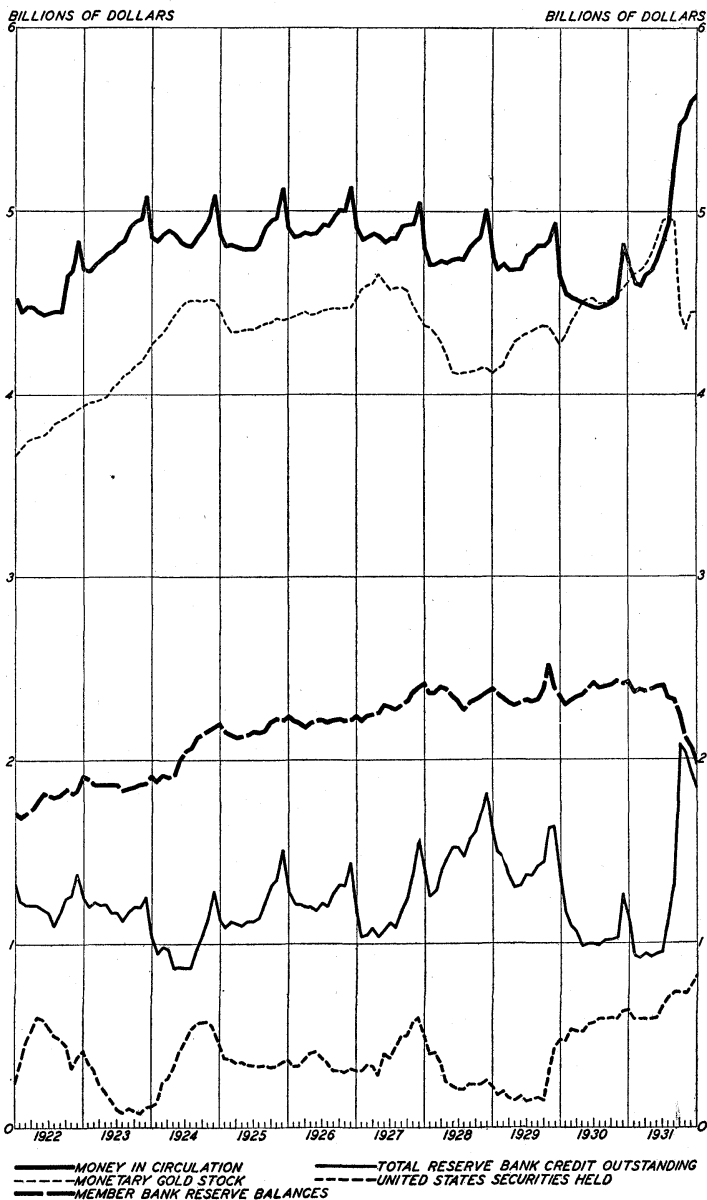
In the year 1922 the Federal Reserve authorities for the first time found themselves faced with a definite problem of credit control and at the same time possessed of sufficient independence to make their decisions significant. The situation in which the System found itself may be summarized as follows:

First, gold was flowing into the country in large quantities from Europe and going out in much smaller quantities to South America and the Orient. Second, loan liquidation at member banks, which had been proceeding at a rapid rate through 1921, continued through the first half of 1922. Third, liquidation of member bank credit at the Reserve Banks also continued through the first half of 1922. The accompanying chart shows how the volume of Reserve credit went down as the gold stock went up.

The third of these developments was a consequence of the other two. The importation of gold furnished the member banks with a means of liquidating their indebtedness, while the low level of business activity relieved them of any pressure to increase their reserves by depositing the gold, and thereby to make possible a larger commercial credit structure.

It is perhaps necessary to point out that the large inflow of gold at this time was the result of a very unusual international credit situation. Practically all the European currency systems were based on irredeemable paper. During the months immediately preceding the collapse of the boom in 1920-21, the former warring

PRINCIPAL ELEMENTS OF THE CREDIT STRUCTURE 1922-31



countries had been very heavy buyers in the United States, their purchases being financed in part by the flotation of bonds, but chiefly by the extension of short-term credit by exporters who in turn were financed by short-time credits issued by American banks.

The developments of 1920-21 put an end to the easy extension of this type of credit. Heavy losses were incurred by exporters on account of the refusal of European buyers to accept delivery of goods which had been contracted for at high prices and on account of inability to make collections. Although these losses were in large part incidents of a world-wide price adjustment and did not necessarily reflect a permanent impairment of credit of European buyers, the immediate effect was to make American exporters unwilling to trade except on a cash basis—and because of the instability of the European currencies that meant a dollar basis.

A few years later it became possible to finance an excess of American exports over imports by the sale of long-term securities, but in 1922 and 1923 such securities were not salable in large volume on American investment markets. These years intervened between an era of easy short-time credit and an era of easy long-time credit—ease being tested, in each case, by the volume of financing, rather than by the rates charged. In this situation the alternatives open to the European public were (a) to curtail the excess of their buying in America over sales of goods here, (b) to return American securities, (c) to ship gold. All three lines of procedure were followed, but the first was peculiarly difficult because of the accumulated deficiencies, both of capital and of consumption goods carried from the war period, and the second was of limited value because American

securities had already been so largely returned as an incident of war finance.

During this period neither the Federal Reserve Board nor the managements of the individual Reserve Banks had either historical knowledge or personal experience of similar situations which could be trusted as a guide. Moreover, the close connection between open market operations and credit control had not been recognized, so that for most of the year 1922 the open market operations were left to the judgment of the directors of the individual Reserve Banks, and were not utilized as an instrument of control at all. As the gold flowed into the member banks it was deposited by them with the Federal Reserve Banks, at first to reduce indebtedness, later to create reserves which were utilized by the member banks in large measure in the purchase of securities. As the Reserve Banks did not expand their own earning assets correspondingly, the ratio of gold to Federal Reserve obligations continued to rise, as it had been doing since the summer of 1920.

From the middle of 1922 on, the rise of the reserve ratio was checked because the Reserve system adopted the policy of paying out gold certificates in place of Federal Reserve notes. Between July 1922 and the end of 1925, gold certificates in circulation increased by 940 million dollars, while Federal Reserve notes decreased by 300 million dollars. This virtual use of gold for currency served to mask the increasing abundance of the gold supply and protected the Federal Reserve authorities from popular pressure in the direction of an easier credit supply.

Since the gold certificate requires a backing of 100 per cent in gold, and this gold is not counted as part of

the reserves of the Federal Reserve system, the effect of substituting a gold certificate in circulation for a Federal Reserve note (which requires only a 40 per cent gold backing) is to cut down the reserve ratio. Gold thus put into circulation forms a secondary reserve which can be drawn upon in case of shortage by expanding the volume of Federal Reserve notes, provided that eligible commercial paper is available to furnish the 60 per cent backing for Federal Reserve notes. This use of gold in the form of certificates is the only important survival of a common feature of pre-war European monetary practice, namely the use of gold in circulation as a secondary reserve.

I. DECENTRALIZED CREDIT CONTROL, 1922-23

During the first half of 1922 rediscounts, which already had fallen in fourteen months from 2,800 million dollars to 1,146 million, continued to shrink, standing at 461 million at the end of the half-year. Rates remained comparatively stable during this period and clearly had little to do with the member banks' policy of liquidating their indebtedness.

The Reserve Banks, however, were engaging in open market operations on a scale previously unapproached. The volume of United States securities held by the twelve Banks rose from an average of 236 million dollars in January to 604 million in May, from which the figure dropped to 326 million in November, recovering to 379 million in December. The average for the year was 454 million as compared with 264 million in 1921 and 323 million in 1920.

During the first half of the year these open market operations were carried out by the individual banks on

their own initiative, chiefly for the sake of the earnings. Objection to the practice arose from advocates of centralized credit control,¹ and also from the Treasury Department, which found that the unsystematized purchasing activities of the twelve Banks constituted a disturbing element in the money market, and interfered with the planning of Treasury operations. On the initiative of the Treasury, an open market committee was formed by the governors of the Reserve Banks to co-ordinate the purchasing activities of the System. This committee began to function in June 1922. The date almost coincided with the peak of open market holdings, but the coincidence may have been accidental, as the function of the committee at the outset was apparently to co-ordinate the operations rather than to control their volume.

II. MODERATE RESTRAINT, APRIL-DECEMBER 1923

In April 1923 the Federal Reserve Board passed a resolution to the effect that "the time, manner, character, and volume of open market investments purchased by Federal Reserve Banks be governed with primary regard to the accommodation of commerce and business, and to the effect of such purchases or payments on the general credit situation." The governors' committee on open market purchases was dissolved, and a new committee was appointed by the Federal Reserve Board to exercise control of the open market operations—the new committee, however, being identical in membership with the old one, and having the same chairman,

¹ See "Minutes of the Federal Advisory Council," Sept. 26, 1922, reprinted in the *Annual Report of the Federal Reserve Board*, 1922, p. 413.

Governor Benjamin Strong of the Federal Reserve Bank of New York.

The immediate occasion for the adoption of this resolution appears to have been the conclusion reached by the Federal Reserve Board, on the basis of the work of its Division of Analysis and Research, that the total earning assets of the Reserve Banks had not, during 1922, been affected materially by open market operations, since rediscounts fell off as open market purchases increased, and vice versa. This being the case, the conclusion was obvious that effective credit control required co-ordination of the open market policy and the discount rate policy. It was entirely logical, therefore, that the time, place, and manner of open market operations should be brought within the scope of the Reserve Board's responsibility.²

The first test of the new method of credit control was afforded by the events of the spring of 1923. The revival of business activity which began toward the end of 1921 proceeded with such rapidity that by the spring of 1923 fears were aroused in many quarters that we might be running into a renewed period of inflation. From June 1922 to March 1923 the index of general business activity compiled by the American Telephone and Telegraph Company rose from -14 to $+10$ (as compared with the January 1920 peak of $+13$). Pig iron production of 3,524,000 tons in March 1923 broke all previous records. The wholesale price index of the

² This attitude was implied in the recommendation of the Federal Advisory Council of Sept. 26, 1922 "that open market operations, particularly in so far as they touch investment in government securities, should be carried on under a uniform policy by the System as a whole," though it was not suggested at that time that the Federal Reserve Board should take over direct responsibility for the control of such purchases. Compare *Annual Report of the Federal Reserve Board*, 1923, pp. 11-16.

Bureau of Labor Statistics rose from a low of 138 in January 1922 to 159 in March 1923.

Under ordinary circumstances the public would not have been alarmed by these advances, which were not extreme considering that they were measured from the bottom of a profound depression. But the inflation experience of Europe reinforced the lesson of the crash of 1920-21, which was too fresh in men's minds to be ignored, and made it easy to obtain popular support for a program of caution. The first definite measures of credit control were in the direction of restraint. Open market holdings of United States government securities, which stood at 456 million dollars on January 3 and at 239 million dollars on April 4, were allowed by the newly constituted open market committee to run down to 95 million by July and to 73 million by November. In February and March discount rates at Boston, New York, and San Francisco were raised from 4 to 4½ per cent, which made the latter rate uniform throughout the System. In spite of this gesture, however, rediscounting increased as rapidly as securities were sold, and remained far above the 1922 figure throughout the last half of the year.³ Thus the total of Federal Reserve credit remained about the same as in 1922. Gold imports, which had dropped to negligible figures in the spring, revived and ran at high figures throughout the last half of the year, but the increase in gold stock was absorbed by an increase in monetary circulation. The net result of these offsetting changes was that member bank reserves remained at almost exactly the level of 1922.

The peak of the mild business boom was reached in April. The downturn was very gradual and even at the

³ Except for December.

end of the year activity in most lines was fully up to what was regarded as normal. This slackening of the pace of business was unquestionably in line with the hopes of Federal Reserve authorities; how far it is to be attributed to their efforts we consider at a later point.⁴

III. AN EASY MONEY POLICY, 1924

The events of 1924 make two quite distinct stories, one covering the completion of the business liquidation movement, running through July, the other the period of rapid recovery. During February and March 1924, the downswing of the business cycle was interrupted by a sharp but temporary recovery; then productive activity suffered one of the most acute setbacks in our history. By July, pig iron production was down to 1,780,000 tons for the month (as compared with 3,680,000 tons in July 1923); wholesale prices had dropped to 147 from a maximum of 159; and the American Telephone and Telegraph index had fallen from +18 to -16. However, the period of acute depression proved to be short; the restriction of basic production and the resulting unemployment were not reflected in greatly diminished consumptive expenditures. Trade and distribution consequently were not curtailed to an extent at all comparable with the decline of industrial activity, and the volume of commercial borrowing continued at a high level right through the depression.⁵

During the summer, business activity made only a small recovery. Then in the autumn came a combination of good crops here and bad crops abroad, a conjuncture

⁴ Compare pp. 84-85.

⁵ Compare *Annual Report of the Federal Reserve Board*, 1924, p. 2.

which on several previous occasions had come to the rescue of American business in distress. Prices of farm crops rose rapidly. The election returns of November were viewed with as much enthusiasm in industrial circles as were the crop developments by agriculturalists. Under these influences, business activity mounted abruptly to a high prosperity level.

At about the beginning of 1924 the open market policy of the Banks was reversed. From a level of 133 million dollars at the beginning of the year, holdings of the United States government securities mounted steadily until they crossed the 600 million mark in October, after which they remained about steady, ending the year at 540 million. The acceptance buying rate, which had stood at $4\frac{1}{8}$ per cent all through the last half of 1923, fluctuated between that figure and 4 per cent until April, then plunged downward to 2 per cent. The New York rediscount rate also was lowered in successive steps of $\frac{1}{2}$ of 1 per cent on May 1, June 12, and August 8, ending the year at 3 per cent. Three other eastern Banks went to $3\frac{1}{2}$ per cent, while the other eight Banks ended the year at 4 per cent. From the end of 1923 to the autumn of 1924 the policy of the Federal Reserve system was directed toward monetary ease with more vigor than at any other period in the history of the System prior to 1930. This policy, which coincided during the first half of the year with large gold imports, resulted in an extreme depression of short-term money rates, which touched in late summer the lowest level attained since the war, and had recovered only slightly at the end of the year. Gold imports dropped to low levels after June, and in December there was a net export, the first since 1920.

IV. A PERIOD OF NEUTRALITY, 1925-26

In 1925 the Federal Reserve system played a less prominent role in the money markets of the country. During the first half of the year there was a slight recession in business activity and during the last six months a correspondingly slight upswing. The amazing rise in stock prices which had started in the middle of 1924 continued through the year without serious interruption. By the end of 1925 the popular stock price indexes had advanced to levels nearly 50 per cent above those of the middle of 1924.

In banking circles the most notable development of the year was the very rapid increase of investments in securities and of loans on securities. The gold export movement which had begun in December continued through the first part of the year, and was only partly offset by an unusually large return of currency from circulation. There was some decline in commercial loans but it was more than offset by an increase of lending on collateral; hence additional Federal Reserve credit was used in spite of the absence of pressure for short-term credit from trade sources. Fears began to be expressed that an excessive amount of credit might be going into the support of speculation.

The increase in Reserve credit took the form of rediscounts and acceptance holdings. Government security holdings of the Reserve Banks were decreased in the first two months by about 200 million dollars and after that date were maintained at a practically constant level.

In the fall of the year there was an increase in the open market rates for commercial paper. In view of this rise and of the growth of bank credit,⁶ a series of ad-

⁶ *Annual Report of the Federal Reserve Board*, 1925, p. 6.

vances in discount rates was made in November, all the Banks which had $3\frac{1}{2}$ per cent rates bringing them up to 4 per cent. The New York rate was not raised until after the first of January; all the rest of the Banks ended the year with a 4 per cent rate.

The year 1925 marks the beginning of definite large-scale credit relations between the Federal Reserve system and European central banks. The gold standard was re-established in England in April. As part of a plan for protecting the exchange the Bank of England asked for, and obtained, a contract giving it the right to draw on the Federal Reserve Banks for gold, up to an amount of 200 million dollars over a period of two years, repayment being guaranteed by the British Treasury. No advances were actually made under this credit, but the assurance that gold could be obtained on demand in America was presumably of material assistance to British financial authorities in carrying through their stabilization program. Credits were also extended to Belgium and Poland.⁷

In 1926, as in 1925, the Federal Reserve system was called upon to take no drastic measures of credit control. The outstanding peculiarity of the year was a high rate of business activity combined with declining commodity prices and very moderate expansion of bank credit. As in 1925, there was a slight slackening of business activity in the spring but the recovery was very rapid. Annual data indicate that as measured by productive activity and by corporate profits, 1926 was more prosperous than had been any preceding year since 1916. Yet the increase in member bank loans and investments during the year was the smallest shown for any year between

⁷ For fuller discussion see Chap. VI.

1921 and 1929. Moreover, in contrast with the situation in 1925, what bank expansion there was in 1926 was in the field of commercial loans. Loans on securities declined slightly while security investments increased by about the same amount.

The stock market continued to be very active. The volume of sales was practically the same as in 1925, and nearly 50 per cent greater than in the most active preceding year. Stock prices suffered a short but very severe decline in the first part of the year, then advanced slowly. The loss was little more than made up by the end of the year.⁸

Rediscount rates at all the Reserve Banks stood at 4 per cent throughout the year except at New York, where the rate was reduced to $3\frac{1}{2}$ per cent on April 3 and restored to 4 per cent on August 13.⁹ The only important change in open market policy corresponded to the change in rediscount rates at New York, 65 million dollars of United States securities being purchased in the spring, and 75 million sold in the period immediately after the restoration of the 4 per cent rate in August.¹⁰

V. EASY MONEY AGAIN, 1927

Federal Reserve policy in 1927 was apparently dominated by two factors: the industrial situation and the international movement of gold. The year was one

⁸ The Standard Trade and Securities index dropped from a high of 103.3 in the first week of March to 90.8 in the third week of April. A new high for the year was made in the first week in September at 105.2, and the fourth week of December showed an average of 106.5. The net gain of 3.1 for the year may be compared with 16 points in 1925, 11 points in 1924, and 13 points in 1922.

⁹ During the first week of the year the New York rate was $3\frac{1}{2}$ per cent, the establishment of the 4 per cent rate being the last of the succession of increases which was initiated in November 1925.

¹⁰ For discussion of these changes see p. 122-23.

of moderate business recession, particularly during the last six months. This curtailment of business activity was due in part to the coal strike which began in April, and in part to the fact that production was suspended at the Ford plant during most of the year.

The stock market showed no effect of the curtailment of business activity, advancing rather steadily throughout the year.¹¹ The low for the year was practically as high as the high for all preceding time, and the general average at the end of the year was 75 per cent above that of the middle of 1924. The expansion of security market operations, accompanied by declining activity in business, reflected itself in a 15 per cent expansion of security loans at member banks and a trifling contraction of "all other" loans, which are chiefly commercial. Bank investments in securities expanded by over 14 per cent.

During the first half of 1927 gold came into the country very rapidly. This inflow of gold, together with the usual seasonal return flow of currency, enabled member banks to liquidate their indebtedness, with the result that the volume of Reserve credit outstanding declined during the summer to the lowest level reached since the summer of 1924. During the first half of the year there were no significant open market operations and no changes in rediscount rates.

About the middle of the year the Federal Reserve Board adopted, for the second time since 1922, a definite policy of easing the money market. At various dates from July 29 to September 13, rediscount rates were lowered from 4 to 3½ per cent at all the Federal Re-

¹¹ The Standard Statistics index of 410 stocks advanced from 105.5 at the beginning of the year to 134.1 at the end.

serve Banks. Open market operations were renewed, about 80 million dollars of government securities being purchased in the course of the summer. This easy money policy was explained as due in part to a desire to aid in the recovery of business from depression and in part to a policy of aiding foreign nations to finance purchases of American crops and to protect their exchanges.¹²

The easy money policy led to an open break between the Federal Reserve Board and the Federal Reserve Bank of Chicago. The practice had always been for the Reserve Banks to initiate rate changes and the Federal Reserve Board either to ratify or to veto them. In this case, however, the Board ordered the Reserve Bank of Chicago to put into effect the $3\frac{1}{2}$ per cent rate, over the protest of the Bank.¹³

In November, open market purchases were discontinued, "largely because of the fact that in the absence of demand for additional credit from trade and industry there was a continued rapid growth in the volume of member bank credit used in investments and in loans on securities."¹⁴ The net effect of the year's operations, however, was an increase in member banks' reserve balances of 180 million dollars as compared with no net increase in 1926.

VI. THE ATTEMPT TO CURTAIL SPECULATION, 1928-29

The year 1928 was one of active business, expanding speculation, continued growth in the volume of outstanding credit, and a rising level of money rates in the open market. Business recovered rapidly from the recession of 1927, and through the last three quarters was fully up to normal, though not extraordinarily active.

¹² *Annual Report of the Federal Reserve Board*, 1927, pp. 10, 16.

¹³ See pp. 104-05.

¹⁴ *Annual Report of the Federal Reserve Board*, 1927, p. 11.

The Federal Reserve system abandoned its policy of keeping money rates low, and presently directed its energies to curbing the growth of speculative loans. In January and February, discount rates at all the Reserve Banks were raised from $3\frac{1}{2}$ to 4 per cent and advances were made in the buying rates for acceptances. Between April 20 and June 7 discount rates were advanced to $4\frac{1}{2}$ per cent, and in the three weeks beginning July 11 the rates at eight Banks were further raised to 5 per cent. Buying rates for acceptances by the end of July ranged from $4\frac{1}{2}$ to 5 per cent and remained at that level through the rest of the year.¹⁵ At the same time the security holdings of the Reserve Banks were rapidly liquidated, falling from over 600 million dollars in January to less than 250 million in June.

The pressure on the member banks thus exerted by the Reserve Banks was reinforced by pressure from abroad. Gold flowed out rapidly throughout the first half of the year, and returned during the second half only in small volume. The net result for the year was a decrease in monetary gold stock of 274 million dollars. To a slight extent this loss was offset by a decrease of 30 million dollars in money in circulation.

The member banks met the pressure on their reserves in part by increasing their borrowings at the Reserve Banks and in part by curtailment of their own activities. Rediscounts increased by 474 million dollars, and total Reserve credit by 192 million. Total loans and investments showed a decrease for the year of 32 million dollars and member bank reserves a decrease of 98 million. The decline in bank loans was more than accounted for

¹⁵ The $4\frac{1}{2}$ per cent rate was charged on all maturities of less than 90 days, such paper making up the great bulk of the transactions.

by the decrease in security loans and investments, commercial loans showing a small increase.

Naturally with increasing business activity and declining bank reserves, money rates in the open market advanced rapidly. Commercial paper, which opened the year at 4 per cent, was quoted at $5\frac{1}{4}$ to $5\frac{1}{2}$ at the end of the year; call money went above 8 per cent in December, and time loans on securities were quoted at from 7 to $7\frac{3}{4}$ at the end of the year. The spread between rates on security loans and on commercial loans was wider than at any previous time, or at least for 40 years. The difference was due partly to the great intensity of the demand for credit in the securities market and to the fact that security loans are not eligible for rediscount; partly to a common banking policy of favoring the commercial as against the speculative borrower.

In spite of official discouragement and the rising cost of money, the stock market continued to be buoyant, not to say flamboyant, throughout the year. Stock prices, as measured by the Standard Statistics Company's index numbers, rose from 135 to 171; brokers' loans¹⁶ rose from 4,400 million dollars in December 1927 to 6,440 million in December 1928. The increase in brokers' loans was made possible, in spite of a curtailment of collateral lending by the banks, through a great increase in the volume of loans made by corporations, private individuals, foreign banks, and other agencies outside the "legitimate" banking fraternity. The discrimination on the part of banks against the stock market, coupled with the willingness of speculators to pay high rates and the unwillingness of banks to meet this competition by high rates on deposits, was leading to rapid elimina-

¹⁶ As reported by the New York Stock Exchange.

tion of the banks from the business of financing speculation, except as agents for the lenders.

With the coming of the new year, the tendencies which had shown themselves in 1928, both in the stock market and in the money market, became even more evident. The call loan market, to be sure, eased slightly in January, but time money and commercial paper rates remained firm, and by March all three markets were once more advancing. Stock prices continued to rise, and brokers' loans to expand. Flotations of stock issues reached figures hitherto unheard of, while bond issues dwindled. Moreover, the high rates began to attract capital from all over the world, and gold imports rose rapidly.

The Reserve Board was reluctant to sanction further advances in rediscount rates, but the rates on acceptances were raised to levels above those charged for rediscounts. In addition there was instituted a new policy of "direct pressure," that is, refusal to lend to banks which were making call loans on stock market security. In February a warning was issued by the Reserve Board against the excessive absorption of credits by the stock market, and banks were urged to co-operate in diverting funds to agriculture and business.¹⁷

During March and April indications were that the Board had been measurably successful in securing the co-operation of member banks in its efforts to cut down the proportion of credit which was being used for security speculation. At least in the next seven weeks after

¹⁷ At least such a policy was promulgated by the Board. It is difficult to say how far the Reserve Banks went in carrying it out. Apparently the New York Bank did not give much heed to it; alleging, truly, that New York banks were not loaning heavily in the stock market. Compare p. 133.

the warning of February 7, brokers' loans reported by domestic bankers declined by nearly 300 million dollars. Against this decline, however, there was an increase of 275 million dollars in the loans made by lenders "other than banks," so that the total of brokers' loans changed only slightly. The total of reporting member bank credit was also substantially unchanged over the next two months.

Nevertheless, Reserve Bank pressure on the market was increased. Rates at those Reserve Banks which had ended the year 1928 on a $4\frac{1}{2}$ per cent level had all been brought up to 5 per cent by May, and the acceptance buying rates were $5\frac{1}{2}$ to $5\frac{3}{4}$ per cent. The net inflow of gold in the first half of 1929 was 180 million dollars, the result being that foreign bank rates rose sharply, while rates in this country were not eased. Member bank borrowings continued around the billion-dollar level, while acceptance holdings fell to the lowest figure in post-war history.

The general stock market averages remained about steady through the first six months of the year 1929, but the volume of speculation was very large and there were wide swings in prices of individual securities. For example, the public utility index rose 62 points from the first week of January to the fourth week of June, while automobile stocks in the same period dropped 44 points. Copper stocks rose from 261 to 277 and steel stocks from 168 to 183, while fertilizers fell from 140 to 104 and leathers from 145 to 99.¹⁸ In the same period the total volume of brokers' loans increased by 212 million dollars, though loans for the account of banks decreased by 576 million dollars.

¹⁸ Indexes of Standard Statistics Company.

During the late spring and early summer there began to be signs that business as well as the stock market was running at a rate above normal. Automobile production in particular set extraordinarily high records down to the late summer. Moreover, in July the stock market began to advance more rapidly than ever. The Standard Statistics Company's general index which, as already noted, had made but little advance from January to June, advanced 10 points in July and 11 points in August, reaching its high point in the third week in September.

This development, combined with the evidences of over-capacity in the industrial field, placed the Federal Reserve authorities in an embarrassing situation. With the oncoming of the crop-moving season and the expansion of currency demand which always occurs in the autumn, traditional Federal Reserve policy called for an expansion of the purchases of acceptances, in order to enable the banks to furnish currency for domestic needs and also to facilitate the purchase of crops by foreign buyers. The Federal Reserve Board had definitely committed itself at the beginning of the year to a policy designed to reduce the flow of capital into the securities market without making it dear for other business. Moreover, the high money rates in New York were creating vigorous protest throughout the world. Gold continued to move into this country, the net import movement in July being 34 million dollars, and in August 18 million. The New York Reserve Bank, which had been responsible for the initiation of the easy money policy in 1924 and 1927, had been urging higher rates for several months.

Confronted by this dilemma, the Reserve authorities

compromised. On the main point at issue, namely the release of Federal Reserve credit to ease the money situation, they surrendered to the demands of business interests at home and abroad; on the nominal cost they surrendered to the restrictionists. On August 9 the New York rediscount rate was raised from 5 to 6 per cent, and at the same time the buying rate on acceptances was lowered to $5\frac{1}{8}$ per cent. The increase of the rediscount rate served as a gesture of disapproval of the stock market situation, slightly more emphatic perhaps than the gesture of February 7, but quite as futile. The lowering of the acceptance rate effectively eased the money market.

Acceptances at once began to increase, running up from 75 million dollars in July to 355 million in the last week of October.¹⁹ Rediscounts declined in the same period by 250 million. The commercial paper rate stayed above 6 per cent up to the end of October, but call loans dropped to 6 per cent, the lowest level in more than a year. Total loans and investments of member banks, which had shown no increase since 1927, increased rapidly from 22,581 million dollars on August 7 to 24,431 million on October 30.

The next chapter is too well known to require detailed narration. The stock market boom which had defied the influence of tight money for nearly a year had run its course, and was unable to profit by easier money. From the middle of September to the middle of October prices sagged off gradually, and then there ensued the most precipitous drop in the history of American security markets.

¹⁹ This increase is not altogether due to the rate change, as the supply of acceptances is always increased by autumn exports. The increase in 1929 was much more than seasonal, however.

Reserve policy in this panic, as in the lesser stock market collapse of 1926, was directed to assisting the banks to take care of the situation. As in previous stock market collapses, leading banking interests came to the rescue of the market with purchases intended to prevent demoralization and to make possible an orderly adjustment to the lower level. Trading and investment companies affiliated with the large city banks bought stocks and posted them with the banks as collateral for loans, and the banks replenished their reserves by selling their government securities to the Reserve Banks.

VII. THE BANKS AND THE DEPRESSION, 1930-31

As soon as it was clear that the stock market boom was over and that the immediate future held threat of business depression, the Federal Reserve system adopted a policy of monetary ease. This policy was expressed both through large purchases of United States government securities and through unprecedented reductions of Reserve Bank rediscount and acceptance rates. At the end of October 1929, the rediscount rate stood at 6 per cent in New York, and at 5 per cent in all other Banks. By January 1931, it stood at 2 per cent in New York, $2\frac{1}{2}$ per cent in Boston, 3 per cent in five Banks, and $3\frac{1}{2}$ per cent in the other five. Further reductions brought the rates down by June to a maximum of 3 per cent, with New York at the unprecedentedly low figure of $1\frac{1}{2}$ per cent. In spite of these reductions, the volume of rediscounts fell to the lowest level in the history of the Reserve system.

Rates on acceptances fell from $5\frac{1}{8}$ per cent in the autumn of 1929 to $1\frac{7}{8}$ per cent at the close of 1930, with acceptance holdings closing the year 1930 at about the same figure as that of 1929. Holdings of United States

government securities, as tested by monthly averages, crossed the 600 million mark in October for the first time since May 1922, and in December stood at the unprecedented figure of 644 million dollars.

In spite of these enormous open market purchases, the total volume of Reserve Bank credit outstanding was lower than in any year since the Armistice except 1924, and the last three months of 1930 showed lower figures even than 1924. The same trend showed itself in the first half of 1931. The Reserve Banks continued to expand their holdings of United States government securities, the only type of credit extension which is under their direct and complete control. But the funds thus put into the market came back through reduction of rediscounts or were applied to the purchase of acceptances which would otherwise have been offered to the Reserve system. Thus throughout the spring the total figures for Reserve credit outstanding ran below all post-war records.

The primary cause of this deflation of credit was the widespread business depression. Confidence in the future was lacking to such an extent that only the very highest grade of short-term securities commanded a strong market. Speculative investors who in former years had carried securities on bank credit, sold them and liquidated their indebtedness. Commercial borrowings for carrying inventories and accounts receivable were at a minimum. Moreover, since business abroad suffered from even deeper stagnation than did business in the United States, low rates in this country did not produce their normal effect of an outflow of gold. On the contrary, in spite of its deeply depressed condition, the American market continued to be one of the most attractive markets in the

world for floating funds, and gold flowed in throughout 1930 and the first half of 1931 at a rate approaching the record figures of the years from 1921 to 1924.

In the face of this combination of a demand restricted by business depression and speculative pessimism, and credit supply enhanced by the inflow of gold, there ceased to be an effective demand for Reserve credit. The Reserve Banks did the only thing they could do under the circumstances. They spread their wares on the bargain counter and waited for the reappearance of demand.

VIII. THE CRISIS OF 1931

For nearly two years following the stock market crash in the autumn of 1929 the policy of the Reserve system was very simple. Larger and larger open market purchases and lower and lower rediscount rates seemed to be the only program by which the Reserve system could hope to stem the tide of deflation. And even though these measures apparently were unavailing, there seemed to be no unfavorable results on the credit structure, and no danger that the Reserve system would be weakened by its liberal policy so long as neither business nor speculation afforded an outlet for the funds thus freely offered.

Events of the late summer and early autumn of 1931, however, completely changed the situation and brought about a sharp reversal of the rediscount policy. A succession of credit stringencies and bank embarrassments occurred in Central Europe and led directly to the suspension of gold payments by Great Britain, by the Scandinavian countries, and by a number of countries in other parts of the world. And, in a considerable number of countries which did not forsake gold parity, foreign

exchange transactions were subjected to rigid governmental control.

These events, coupled with a continuous series of bank failures in America, administered a severe shock to what was left of public confidence both in America and abroad. There ensued in various European countries a revival of the hoarding of gold and of bank notes, and a flight of capital into the countries whose currencies seemed to be relatively strong. This fact together with losses incurred and anticipated on sterling precipitated a scramble on the part of central banks to turn their foreign assets into gold.

In America also there was a great increase in the holding of currency. During September and October money in circulation rose by half a billion dollars. By the end of the year there was a further increase of 200 million dollars to 5,648 million, the highest figure ever recorded. At the same time gold was going out of the country faster than ever before. During September the country lost 257 million dollars from its gold stock, and in October it lost 450 million more.

To meet this call for a great increase of circulation at the same time that gold was going out of the country, an enormous immediate expansion of the Reserve system earning assets was necessary. From August to December, holdings of United States securities went up 50 million dollars, acceptances 80 million, and rediscounts nearly 500 million, bringing the total of Reserve system credit above 2 billion for October and November, and just below that figure for December. The combined reserve ratio of the Federal Reserve Banks dropped from 78.8 per cent at end of August to 65.1 at the end of November.

In spite of the fact that the gold position of the Reserve Banks was tremendously strong, alarm was felt for the safety of the reserves, and rediscount rates were advanced with unprecedented rapidity, the New York rate going from $1\frac{1}{2}$ to $2\frac{1}{2}$ per cent on December 9 and $3\frac{1}{2}$ on October 16. By the middle of November all Banks had $3\frac{1}{2}$ per cent rates except Richmond and Dallas, which were on a 4 per cent basis. Up to April 1932 these rates remained unchanged except that the two 4 per cent Banks dropped to the prevailing level in January, and New York dropped to 3 per cent in February.

The winter of 1931-32 was a period of great public interest in banking questions, but no important changes either in legislation or in policy ensued. The Glass-Steagall Act, which was rushed through Congress to save the gold standard, provided that United States government securities might be used to back Federal Reserve notes, thereby making it possible to release a very large amount of gold for export or for hoarding. This measure was predicated on the assumption that there was a shortage of eligible commercial paper. In view of the fact that member banks held at the close of 1931 more than 7 billion dollars of eligible assets, of which only about 600 million had been used for borrowing purposes, the emergency which called for legislation was obviously remote. To be sure, the eligible paper which was not in the hands of the Federal Reserve Banks could not be used as a basis for the issue of notes, but experience has shown that the volume of rediscounting can readily be increased at any time by the simple expedient of selling out the open market holdings of securities. The real difficulty was the tradition against

rediscounting. By encouraging the idea that a bank ought to regard the use of Reserve credit as an emergency device or a temporary expedient, the System has made it impossible to stimulate rediscounting by low rates at times when its own credit policies call for an increase in its holdings of eligible paper. It has changed the open market purchase of securities from a supplementary device intended to strengthen the influence of the rate into the principal method of controlling credit. Hence it has found it necessary to use the paper purchased through its open market operations for a purpose for which it was originally intended that nothing should be used except paper arising from loans to member banks or from the purchase of acceptances.

PART II
THE MAJOR STANDARDS

CHAPTER IV

STABILIZATION OF THE MONEY MARKET

In Part I we have discussed the organization of the banking system which has grown up in the United States since the passage of the Federal Reserve Act in 1913, and have outlined the post-war history of the exercise by the Reserve Banks and the Reserve Board of the powers of credit control entrusted to them by that Act. In Parts II and III we shall consider topically the way in which various questions of policy have been handled in the years from 1922 through 1931. We shall consider first the more important issues, deferring to Part III the treatment of the less significant aspects of Reserve system policy.

The most important issues which have led to the adoption of credit policies by the Reserve system in the years since the end of the depression of 1921 are of four types; namely, disturbances in the money market itself, the fluctuations of business activity, the stabilization of the exchanges of certain European countries, and the activity of speculation in the domestic security markets. In this chapter we survey a number of quite distinct policies which have been developed in dealing with different types of irregularity in the workings of the short-term money market.

In the discussion of banking policy which preceded the creation of the Reserve system, considerable emphasis was laid on the need for an elastic currency. The need for elasticity was evidenced by the frequency with which money became very tight as the result of a

seasonal or other sudden increase in the demand of the public for cash. It was hoped and intended that the new system would provide a way of bridging over these strains. The experience of central banks of other countries was often cited in this connection.

In more recent years, however, as we have noted, interest has shifted to other objectives, and comparatively little is now heard of the money market itself as an object of the central bankers' solicitude. Indeed, it is generally assumed that the normal effect of an intelligent central bank policy will be to "unstabilize" short-term interest rates, since the central bank will be manipulating the money market upward and downward in order to stabilize other phases of business activity. This view has found some support in Reserve Bank circles, though very little has been said about it in official publications. In practice, as we shall see, there are several ways in which the Reserve system operations have actually steadied the money market, especially with reference to short-term disturbances. We shall examine first the theory of what a central bank can do in this direction.

I. THE TRADITION OF CENTRAL BANK POLICY

The treatment of the fluctuations of interest rates breaks into two distinct problems, according to the degree of permanence of the conditions which give rise to them. As was pointed out in Chapter I, the generally accepted theory of credit control does provide for a limited amount of stabilization of money markets; since it requires, or permits, a central banking system to minimize those fluctuations of interest rates which are known to be due to strictly temporary causes.

For example, it is generally agreed that it is sound

policy to engage in credit operations which will tend to reduce the effect on interest rates of regular seasonal variations in the demand for money. Likewise those fluctuations in the supply of or the demand for funds which are due to Treasury operations, to window-dressing by banks and business corporations, or to stock exchange settlements (under the European term settlement system), can be compensated by transactions which put just enough credit into the market, or take enough out of the market, to offset the effect of the temporary disturbing influence.

Another case for such offsetting operations arises from special gold movements which are not due to commercial considerations but to political factors, or are incidents of stabilization programs. Finally, a Reserve agency or central bank can render invaluable service by temporarily drawing down its reserve to expand credit in times of crisis, thereby preventing the appearance of such extraordinary premiums on cash as characterized our pre-war panics.

It is not, however, a normal central bank policy to offset the effect of gold movements by buying securities when gold moves out of the country, and selling them when it comes in, unless the movements are believed to be only temporary in their character. If an outflow of gold is caused by an adverse balance of payments due to persisting causes (regardless of whether these causes are found in past credit policies, or elsewhere), the more it is compensated by expansion of Reserve or central bank credit, the bigger it will tend to become.

Official discussions of the theory of Federal Reserve system operations do not recognize clearly the distinction between temporary and persistent disturbances, but

Reserve bank practice has conformed fairly well to the theory. The obviously temporary fluctuations in the demand for money and credit—those due to seasonal factors, quarter-day operations, window-dressing, and to emergencies—have been ironed out very consistently and very successfully. Changes in the money market which have been due to more persistent causes—gold movements and booms and depressions—have been handled less consistently. In the following section we shall examine the practice with reference to temporary fluctuations.

II. TEMPORARY DISTURBANCES

At the time when the Federal Reserve Act was under consideration, there was no disagreement as to the need for a system which would display more elasticity in the face of seasonal fluctuations in the demand for credit and currency, and also in times of crisis. A particularly disturbing feature of the United States money market was the periodic stringency which was occasioned by the autumn demand for currency and credit in the interior for "crop-moving," a general term covering a great variety of business operations, including the Christmas trade, which were concentrated in the last four months of the year. The New York banks were never in position to take care of this demand without inconvenience, simply because they employed their resources as fully as possible in the other months of the year and had no reserve to be drawn upon when the tight season arrived. The cause of the difficulty was understood well enough, but there was no incentive for any individual bank to keep itself liquid in anticipation of the autumn strain, so long as others did not co-operate. Had all banks

kept an excess of reserves in the slack period to be drawn upon in the fall, there would have been some compensation in the form of higher rates, but no individual bank operating alone could get such a compensation.

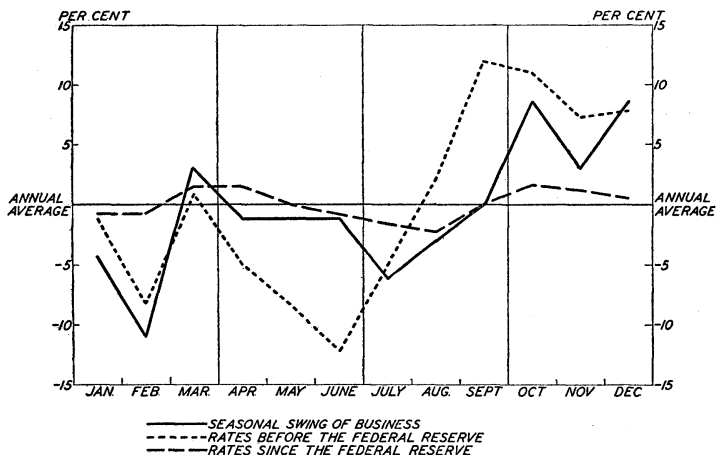
The seasonal fluctuations of interest rates have been reduced to less than half their pre-war magnitude. It was expected that the Reserve system, since it was organized on a limited profit basis, would keep part of its resources idle during most of the year, so that it could provide the extra credit for the autumn without contracting other credit correspondingly or procuring new credit from abroad. This expectation has been realized. There has been a virtual elimination of the seasonal movement of money rates in financial centers, and a considerable reduction in the irregular fluctuations. The diagram on page 68, taken from Governor Strong's testimony at the hearings on the Strong bill,¹ shows very clearly the increase in stability, and the accompanying table shows how the Federal Reserve Banks achieved this result by varying their outstanding credit from season to season.²

Monthly Average (1922-31)	Millions of Dollars	Monthly Average (1922-31)	Millions of Dollars
January	1,269	July	1,155
February	1,163	August	1,152
March	1,161	September	1,238
April	1,161	October	1,358
May	1,134	November	1,401
June	1,143	December	1,514

¹ 69 Cong. 1 sess., *Stabilization*, Hearings on H.R. 7895, before Committee on Banking and Currency, Part 1, p. 423.

² Computed from data in *Annual Reports of the Federal Reserve Board and Federal Reserve Bulletins*.

SEASONAL CHANGES IN MONEY RATES BEFORE AND AFTER
THE ESTABLISHMENT OF THE FEDERAL
RESERVE SYSTEM



The Reserve system has been very successful in ironing out disturbances which originate in Treasury operations. The income taxes are collected in four instalments, on the 15th day of March, June, September, and December, and the maturities of the short-time borrowings of the Treasury regularly fall on the same dates. The Treasury is not given immediate credit by the Federal Reserve Banks for these checks, and consequently it has to borrow from the Reserve Banks to pay off the maturing certificates of indebtedness. To bridge the gap the Reserve Banks make one-day loans to the Treasury, which are renewed from day to day for decreasing amounts. These loans vary widely in amount. The March issues, which are the largest, frequently exceed 200 million dollars for one or two days; in 1929 they amounted to 314 million.

This process by itself would result in putting a large amount of excess credit into the market. The checks which have been used in payment of the taxes are collected gradually over a period of two or three days, and of course do not impair the reserves of the banks on which they are drawn until they are presented for payment. Therefore, in order to absorb the effect of the new funds put into the market by the Treasury's payments, the Reserve Banks sell government securities out of their portfolios, or sell participations in the one-day loans.³ Stabilizing operations of this sort have been so successful that the public is no longer conscious of the need of them.⁴

Window-dressing gives rise to another type of disturbance which has been remedied by Reserve Bank management. This type of temporary stabilizing operation has been described by Governor Strong as follows:

Then there is what is commonly described as the window-dressing of bank balances—something that can hardly be escaped, and which is the practice more or less in all countries. We calculate the reserves of our member banks on a weekly

³ *Ibid.*, pp. 443-45; W. R. Burgess, *Reserve Banks and the Money Market*, 1927, pp. 99-103.

⁴ A comparison of the call money rates for the 15th and 16th with those of the 10th and 20th of the income tax months, from June 1928 to March 1932, indicates that there is still a perceptible tendency for the market to be easier around the middle of the month. In nine out of the twenty cases, the rate was lower on the 15th, the difference averaging 0.4 of 1 per cent. In no case was the rate higher on the 15th. A comparison of the 16th with the 20th gave similar results, the rate for the 16th being lower in seven cases and higher in three cases out of the twenty. The averages for the 15th and 16th and those for the 10th and 20th were practically identical. (When the date in question was not a business day the business day next following was used in the cases of the 10th, 16th, and 20th, and the business day preceding in the case of the 15th.) These differences are much smaller than would be expected in the absence of compensatory action.

average in the big cities, and for the country banks a fortnightly average. It is impossible for a large bank in New York with a large swing of deposits and transactions to maintain its reserve accurately every day at the legal minimum. . . .

If any unusual transaction causes them to be over in the early part of the week, such as on a quarter day, when this big fund comes into the market, then they will run down the latter part of the week to make their average right. That occurs weekly in New York, and was quite a problem for a time, until we devised the plan of changing the periods throughout the Reserve districts somewhat, so that they are staggered. Chicago, Boston, Philadelphia, and other cities use a different period from New York, and it equalizes the necessity for the New York banks to borrow from us at times to adjust their own reserves in that way, and at times to meet demands of out-of-town banks which are adjusting their reserves. . . .

The other window-dressing period is just before the semi-annual bank statements are made, and especially at the end of December. The banks do not like to show borrowed money, and there is a good deal of shifting of borrowings so as to avoid it. That is also done for window-dressing purposes, and sometimes it is a little difficult to manage. At the end of last year we saw that there was going to be a development of that sort, and bought \$50,000,000 of government securities to relieve the situation a little bit; at times we have to do that.⁵

The Federal Reserve system has provided a supply of emergency credit. At the time when the Reserve system was being planned, there was no disagreement as to the need of some provision for greater elasticity in times of crisis. It was everywhere expected that Reserve Banks would keep unused reserves for emergencies, thus averting the necessity of drawing gold out of the United States Treasury, importing it from England, and economizing it by the issue of clearing house

⁵ Hearings on H.R. 7895, Part 1, p. 453.

certificates. This expectation also has been realized. On three occasions—in 1920, 1929, and 1931—the Reserve system has shown itself a better emergency refuge than was available under the old national banking system. These cases are all excellent examples of the sort of service which a central banking system can render, for which it gets very little credit; for the potential disturbances which are prevented from occurring never come to the attention of the public.

III. CYCLICAL DISTURBANCES

For a number of years after 1921 it appeared that the cyclical fluctuations of money rates had shown a definite decrease in range as compared with the period before the establishment of the Federal Reserve system. In 1928 Wesley C. Mitchell made an elaborate analysis of the range of fluctuations of a large number of business series in pre-war and post-war business cycles, and found that out of 20 items tested, interest rates on commercial paper showed a greater degree of stabilization than any other items except two.⁶

On the other hand, in the severe business recession of 1929-31, interest rates were more unstable than were most measures of business activity, and more so than in pre-war collapses. From July 1929 to July 1931 wholesale prices dropped 28 per cent; industrial pro-

⁶ These two were New York clearings and dividend payments by industrial corporations. In the cycle from September 1922 to October 1924, Mitchell found that the "amplitude of fluctuation" of interest rates on commercial paper was 68, and in that from November 1924 to November 1927, it was 45. These figures may be compared with an average amplitude of 148 in 17 pre-war cycles, and a figure of 123 in the mild cycle from December 1911 to March 1914. (*Recent Economic Changes in the United States*, pp. 895-98.)

duction 34 per cent;⁷ pig iron production 59 per cent; commercial paper rates 67 per cent. Then in the course of a few months rates advanced 100 per cent without any corresponding recovery in business conditions. By pre-war experience one would have expected interest rates to fall to about half the peak level.

It certainly is not safe to conclude, therefore, that the Federal Reserve system has had a stabilizing influence upon the money market so far as the cyclical fluctuations are concerned. This is not surprising, and does not mean that its program has miscarried. There is no evidence that the System has ever attempted a program of stabilizing interest rates against cyclical fluctuations. On the contrary, the policy at times has been to accentuate or hasten the fluctuations of money rates in the hope of stabilizing other factors in the business situation—notably in 1929 when money rates were tightened in a period of prosperity and in 1930 and the first half of 1931 when they were artificially lowered in a period of depression.

IV. GOLD MOVEMENTS

The Reserve system's handling of the major problems which have arisen in connection with the inflow and outflow of gold is reserved for consideration in Chapter IX. Mention may be made here, however, of the service rendered in one instance in easing the shock of a sudden large increase in the world's supply of monetary gold.

In May 1927 the Bank of France paid a debt to the Bank of England and thereby regained control of 90 million dollars of gold which had been pledged as col-

⁷ As measured by the Standard Trade and Securities index.

lateral for the loan and had not been counted as part of the banking reserve of either country. Of the gold thus released 30 million dollars was sold for export to the United States, and 60 million was purchased by the Federal Reserve Banks and held in London under earmark. This gold was not counted by the Reserve Banks as a part of their reserves. Later in the month the Bank of France used a part of its dollar funds in New York for the purchase of gold. This loss of gold was offset by the Reserve Banks through the purchase of securities. Later in the summer the Reserve Banks sold the gold which was held abroad and then gradually sold out the foreign exchange which they had received for the gold.⁸

⁸ *Federal Reserve Bulletin*, 1927, Vol. 13, p. 391; *Annual Report of the Federal Reserve Board*, 1927, p. 10; B. M. Anderson, "Some Major Forces in the International Money Market," *Chase Economic Bulletin*, Oct. 29, 1927, p. 14.

CHAPTER V

MAINTENANCE OF SOUND CREDIT CONDITIONS

The basic principle which the Federal Reserve system has enunciated as a guide is that Federal Reserve policy must be shaped toward the promotion of a "sound" credit situation. The meaning of "soundness" and its adequacy as a guiding formula we have to analyze in the present chapter.

The most complete exposition of the concept of "a sound credit situation" is a ten-page analysis of "guides to credit policy" which was published in the report of the Federal Reserve Board for 1923. This statement has been elucidated and amplified in numerous writings and addresses by Reserve system officials. The subject was discussed very fully in testimony before the House Committee on Banking and Currency at the hearings on the Strong bill in 1926, 1927, and 1928.

The doctrine which we have to review has been summarized as follows by Mr. Walter W. Stewart, who was director of the Division of Analysis and Research of the Federal Reserve Board at the time the policy was first enunciated:

I would say that the responsibility that rests upon central banks abroad and the Federal Reserve system in this country is primarily one of maintenance of sound credit conditions. . . . What is meant by sound credit conditions depends on what one regards the sound functions of credit to be. The function of commercial uses of credit is simply to facilitate the production and the marketing of commodities with the maintenance of adequate stocks of commodities in order that the marketing may be orderly. . . .

To test whether or not the credit condition is sound, one has

to begin by determining the volume of production, and whether or not that production is moving promptly through the channels of distribution and whether or not inventories are accumulating. I can see, as an example, a situation where prices may not be advancing, but, on the other hand, declining, yet inventories of commodities were accumulating, and where, if additional credit were granted, it would be used for the purpose of adding to the stock, and would mean simply encouraging the accumulation of additional stocks.¹

The more complete discussion of guides to credit policy in the report referred to may be summarized as follows:²

First, though the ratio of notes and deposits to gold reserves is the banking index which enjoys the greatest prestige in the tradition of most countries, and especially in the tradition of the United States, it is not a serviceable working guide in the absence of an effective international gold standard. Since the international flow of gold does not exert a restrictive influence on credit in the countries from which the gold goes out, it would not be safe to allow it to work automatically in expanding credit in the countries into which the gold goes. The use of the reserve ratio as a test of credit policy rests on the automatic working of the gold standard, which cannot be effective for one country alone.³

Second, the Federal Reserve Act clearly contemplates the exclusion of all Federal Reserve Bank credit from speculative and investment uses and its limitation to productive uses; that is, agricultural, industrial, or commercial employment. The problem of credit control,

¹ 69 Cong. 1 sess., *Stabilization*, Hearings on H.R. 7895 before Committee on Banking and Currency, Part 2, p. 763.

² Compare *Annual Report of the Federal Reserve Board*, 1923, pp. 29-39.

³ Compare above, pp. 11-13.

therefore, involves both a qualitative and a quantitative determination. There will, however, be little danger that the credit created and contributed by the Federal Reserve Banks will be in excessive volume if it is restricted to productive uses.

Third, the volume of credit will seldom be at variance with the credit needs as reflected in the demands of productive industry so long as the volume of trade, production, and employment on the one hand, and the volume of consumption on the other hand, are in equilibrium. When credit is provided to finance the movement of goods through the productive process or to promote the flow of goods from producer to consumer, the use is productive. When the effect of credit is to impede or delay the forward movement of goods from producer to consumer, credit is not productively used. Administratively, therefore, the way to keep the volume of credit issuing from the Federal Reserve Banks from becoming very excessive or deficient is to keep it in proper relation to the credit needs which arise from the operating requirements of agriculture, industry, and trade, and to prevent the use of Federal Reserve credit for other purposes.

Fourth, an effective credit policy must be based on the wide variety of economic data which throw light on the changes taking place in the business situation and their relation to current banking and credit needs. The factual basis of banking administration consists of statistical information relative to the rate at which goods are being produced and marketed.

Fifth, the Board and the Federal Reserve Banks are collecting basic economic data bearing on the volume of production, trade, and employment, and the movement

of prices, and a limited amount of information concerning stocks held by producers and distributors. These data are made available, not only to the Board and the Banks, but to the business community. The co-operation of the public, based upon an understanding of the broad outlines of Federal Reserve credit policy, and upon the use of current statistical data, is of the greatest advantage to a good functioning of the Federal Reserve system.

This report constitutes the most comprehensive statement of Federal Reserve credit policy, and embodies what may fairly be regarded as the leading contribution of the Federal Reserve system to the development of central banking theory and practice. In place of a simple test, such as a reserve ratio or an exchange rate or an index number of prices, there is set up as a standard the maximum facilitation of the production and distribution of tangible goods and the minimum facilitation of the accumulation of speculative inventories.

Under this system, commodity prices come into the picture, but only as a subsidiary element. They come in because it requires a different amount of credit to carry on the same volume of trade at different price levels, but the price level itself is not regarded as of primary significance. A rise in prices is not deprecated, so long as it is accompanied by an expansion of production and a corresponding expansion of consumption. By implication, it is the business of a Reserve system not to check price increases by manipulation of credit, but to supply a volume of credit appropriate to the higher prices, so long as the latter are not interpreted as the evidence of speculative accumulation of inventories. The

time to check credit expansion comes, not when prices begin to rise, but when productive resources are so fully employed that additional credit and further price increases no longer stimulate increases in productive output and corresponding increases in consumption; when further credit expansion is absorbed in speculative withholding of goods from the market and the marking-up of the monetary value of existing inventories.

Though the theory of a sound credit condition is worked out in the annual report for 1923 with great care and skill, there is in it a certain ambiguity. On the one hand the report states that:

... Administratively, therefore, the solution of the economic problem of keeping the volume of credit issuing from the Federal Reserve Banks from becoming either excessive or deficient is found in maintaining it in due relation to the volume of credit needs as these needs are derived from the operating requirements of agriculture, industry, and trade, and the prevention of the uses of Federal Reserve credit for purposes not warranted by the terms or spirit of the Federal Reserve Act.⁴

The clear implication of this passage and of most of the report is that the Federal Reserve system should adapt its policy to the changing cyclical situation just as it does to the changing seasonal situation, curtailing credit when business declines and expanding it when business expands. By doing this, the System avoids the danger that the credit released in times of declining business activity will be drawn off into speculative channels, and the opposite risk that business will be hampered by lack of funds in times when trade is reviving. This line of analysis points to the conclusion that it is not the business of the Reserve system to stimulate

⁴ *Annual Report of the Federal Reserve Board*, 1923, pp. 34-35.

business by making money artificially cheap in periods of depression or dear in periods of boom, but merely to adapt itself to conditions as it finds them.⁵

This is Professor Reed's interpretation of the doctrine⁶ and is perhaps in harmony with an interpretation which was formulated by Governor R. A. Young of the Federal Reserve Board in 1928, as follows:

... A healthy banking situation must be forever the primary concern of the managers of the Federal Reserve Banks and of the Federal Reserve Board. These responsibilities are sufficient to require our best efforts in the determination of the wise course of action. This is one of the reasons why it would be unfortunate if the Federal Reserve system were to be charged with still further responsibilities which are not directly related to banking, such as responsibility for the stability of the general price level or for the moderation of ups and downs in business conditions.⁷

On the other hand, in a different connection the same annual report says:

... It seems clear that if business is undergoing a rapid expansion and is in danger of developing an unhealthy or speculative boom, it should not be assisted by too easy credit conditions. In such circumstances the creation of additional credit by rediscounting at Federal Reserve Banks should be discouraged by increasing the cost of that credit—that is, by raising the discount rate. It seems equally obvious that if industry and trade are in process of recovery after a period of reaction, they should be given the support and encouragement of cheaper credit by the prompt establishment at the Federal Reserve Banks of rates that will in-

⁵ The logical outcome of this policy would be to make stability of interest rates the primary test of policy.

⁶ "Since the Reserve Banks operated in 1924 to ease the credit situation it is clear that the disclosures of production indices were abandoned in that year as a guide to Reserve credit policy." (Harold L. Reed, *Federal Reserve Policy, 1921-1930*, p. 60.)

⁷ Address before the Convention of the American Bankers' Association, Oct. 1, 1928, *Journal of American Bankers' Association*, October 1928, Vol. XXI, p. 281.

vite the use of Federal Reserve credit to facilitate business recovery.⁸

This view, that it is the business of the Reserve system to work against extremes either of deflation or inflation and not merely to adapt itself passively to the ups and downs of business, nor to confine itself to guarding against the inflow of credit into non-productive uses, is the view which in general has seemed to dominate Reserve system policy.

In tracing the way in which the actual record has conformed to the theory of the maintenance of a "sound business condition," we shall assume, with some hesitation, that the doctrine does imply that the Reserve system is to exercise a positive influence on the cyclical movement of business. At the peak, less credit is to be offered by the Reserve system than business would gladly take; correspondingly at the bottom, more credit is to be thrust into the market than the immediate demands of business would justify. In both cases the objective aimed at is an adjustment of production to consumption, without a credit stimulus to either the piling up or the depletion of inventories.

Until 1928 Reserve practice was fairly consistent with the stated theory of a "sound credit situation." The indications are that there was no definite System policy till toward the end of 1922. At least it is difficult to frame a theory which rationalizes the 370 million dollar increase in government security holdings in the first five months of 1922, and the 300 million dollar reduction in the next six. The decrease cannot be accounted for as a measure of restraint, for there were no signs that business was being overdone until early in 1923,

⁸ *Annual Report of the Federal Reserve Board, 1923, p. 10.*

and by that time—say by February 1—the liquidation of securities was more than half completed.⁹

The mild policy of restraint in the spring of 1923 and the vigorous easy money policy of 1924 were clearly in accord with the doctrine under review. So also is the record of 1925-26, aside from the reduction of the rediscount rate at New York in April 1926 (referred to below). These two years furnish an exceptionally good illustration of the working of the "sound credit" standard of Federal Reserve policy, because in this period the procedure suggested by this theory differed more than is usually the case from that suggested by rival doctrines. Ordinarily, for instance, a policy of stabilizing business would be expected to coincide with a policy of stabilizing prices. But in 1925, while most business indexes pointed to a high level of prosperity, commodity prices moved downward and stock prices moved upward with much evidence of speculation. If price stabilization had been made the test, the System would have tried to force an expansion of credit; if the restraint of stock speculation had been the dominant motive it would have called for a contraction; the theory of stabilizing business called for no action one way or the other. The latter theory prevailed through most of the year. The slight increases in discount rates in the fall of 1925, however, are possible indications of a regard for the stock market situation which is not consistent with strict adherence to the stated set of tests.

There were some slight signs of business recession in the spring of 1926 but recovery was quick and the

⁹ Several advocates of price stabilization have held that the open market sales of 1923 were an excellent example of the possibilities of price control through open market sales. The dates of the turning points afford no support to this interpretation.

year as a whole was the most prosperous since 1916. In April the New York rediscount rate was reduced and about 65 million dollars worth of securities were bought, both actions being reversed in August. Officially these actions were coupled with the business situation, though as we point out elsewhere, the course of stock market activity furnishes a more plausible explanation.¹⁰ Commodity prices continued to trend downward through the year in spite of the high degree of business activity; this decline did not lead to any remedial action.

In 1927, as in 1924, price stabilization, foreign relations, and business stabilization, all pointed to a cheap money policy; only the fear of stimulating stock speculation pointed in the opposite direction, and the inflationary policy prevailed. In 1928-29 the System developed an entirely new set of standards, which will be considered in Chapters VII and VIII. The experience of 1930-31 is not of interest at this point, for here again, even more than in 1927, the cheap money policy was equally appropriate under any of the theories we have mentioned.

What are the merits of the formula of the *Tenth Report* as a guide to credit policy, first, as a means of dealing with the abnormal situation created after 1921 by an extraordinary inflow of gold which came for wholly temporary reasons; second, as a permanent working rule for normal times? We shall consider these questions separately, examining first the situation at the time when the policy was put into effect.

The "sound credit situation" test of policy, as applied to conditions in 1922-23 gave good results. The fact that the gold standard was then not in operation

¹⁰ Compare pp. 122-23.

in the rest of the world could not be ignored. To have treated the incoming gold as the equivalent of gold received through the operation of the balance of payments between countries on a full gold standard and to have built a credit structure on it—assuming that it was possible to do it—would have meant first an enormous inflation, and later, when other countries began to rebuild their gold reserves, either a world-wide deflation or the establishment of entirely new standards of the relationship between the world's gold reserve and the outstanding volume of credit. The part of wisdom was to treat the inflowing gold as a trust fund and keep it outside the credit structure. This was done in part by carrying excess reserves, and in part by putting the gold into circulation in the form of gold certificates.¹¹

The policy of 1922-23 was in line with pre-war central banking precedents. It is very easy to exaggerate the revolutionary character of what was done. There is no evidence of any such elaborate policy of sterilization as most European, and some American, writers assume. Unfriendly critics of the "sterilization" policy seem to believe that the inflationary effect of incoming gold is automatic, and that active, energetic, and skillful policy was exercised to prevent that effect. This assumption is quite untenable. On the contrary, there was such a general fear of inflation, based both on American and on European experience, that excess reserves would probably have accumulated somewhere in the System in spite of any measures the Reserve system

¹¹ The only difference in the effects of the two procedures is that by putting the gold into circulation it is kept out of the published statements of the Federal Reserve system, which may lessen the pressure from both domestic and foreign sources for a policy more liberal than that which the Reserve authorities deem proper.

might have taken. Certainly an active, energetic, and skillful policy would have been necessary to reverse the tide of sentiment and induce banks to offer, and business men to accept, such a volume of credit as would have utilized the incoming gold.

"Sterilization" has consisted in accepting gold deposits and suffering the loss involved in carrying reserves above the legal requirement, instead of trying to utilize them fully through vigorous open market operations, and through a very liberal rediscount policy. Had the Reserve Banks been guided solely by considerations of immediate profit they would presumably have pursued such an aggressive policy instead of making business stability the criterion of credit policy. But a refusal to be guided by considerations of profits, though an innovation in American practice, follows the line of well-established European precedent. Central banks of leading countries are not guided, and never have been guided, mainly by considerations of profit.

Aside from profit considerations, and assuming that the Reserve system could have forced into use a much greater volume of credit on the basis of the new reserves, it is very difficult to see what justification could have been found in 1922-23 for an active campaign to bring about a restoration of the expanded credit structure which had collapsed in 1920. True, such a structure could have been supported more safely than in 1919 because of the expansion of the gold reserves. But the debacle of 1921 was so fresh in men's minds that public opinion would never have endorsed the reconstruction of the edifice of credit in the face of the risk that the abundance of gold would be only temporary. The world was sick of inflation and deflation and America

counted herself fortunate to have had as light a dose of it as she had suffered.

It has been argued by foreign critics that a vigorous expansion policy would have helped European nations to stabilize their currency systems and would have lessened the burden of European debts to America. The latter reason could hardly have been offered to the American public as a criterion of American policy; the former had only a limited validity. A higher price level in America, if it had resulted from a different Reserve policy, would have been helpful to those nations which decided to struggle back to the old par values as the basis of stabilization; it would have been of but little aid to those more numerous countries which stabilized by devaluation.

We turn now to a consideration of the merits of the new formula as a working rule for normal times. Is it a permanent contribution to the theory of Reserve system management? And if so, is it equally applicable to the problem confronting central banking systems of other countries? Viewed from this standpoint, the case is much more complicated than it is with regard to 1922-23, and does not lend itself to a simple judgment of approval or disapproval.

Successful application of the policy discussed in this chapter requires large financial sacrifices. If the gold standard is to be maintained, a central bank which adopts as its policy that which is outlined in the *Tenth Annual Report* of the Federal Reserve Board must carry in normal times a large gold reserve in excess of legal requirements, and this gold it must stand ready either to carry idle or to let go as circumstances may dictate. So long as usiness conditions are deemed satis-

factory, all major gold movements in either direction must be offset by credit movements. To offset a gold movement, as has been pointed out previously, tends to cause it to run further than it would have gone otherwise.

The size of the resources of the central bank sets definite limits to the possibility of its action in either direction. In the one direction, potential action is checked by the size of its idle reserves; in the other direction by the size of the portfolio. Only a bank whose assets are large in comparison not only with the total resources of its own market, but with those of the foreign markets with which its banks are in close touch, can hope for success. If in 1929 England and Germany had watched business indexes and disregarded gold reserve ratios they would have kept their discount rates stable or lowered them, with resultant losses of gold much greater than those which they actually suffered. The Reserve Banks could let 250 million dollars worth of gold go out in 1925, and 500 million in 1928, as the result of easy money policies which seemed to fit the domestic needs, but in recent years no other nation, except perhaps France, has been in a position to follow a similar policy under similar circumstances.

The effectiveness of this standard depends on the completeness and reliability of statistical information. Every standard is of course conditioned in its operations by the limitations of knowledge at the command of those responsible for its maintenance as the standard. But the "sound credit condition" standard makes enormously greater demands on the research departments of the Reserve system than would a simple adherence

to reserve ratios, or a policy of keeping wholesale prices stable, or one of stabilizing money markets.¹²

No analysis of the business situation can be more adequate than is the theory of business fluctuations on which it is based. This fact points to a weakness more serious than the lack of statistical data. If credit is to be regulated in accordance with the requirements of business stability, the administering authorities must have a sound and adequate knowledge of the conditions which foreshadow a business boom or a business collapse. They must understand the theory of the business cycle and be masters of the art of business forecasting. And, without in the least reflecting on the competence of the able research staffs of the Federal Reserve Board and of several of the Reserve Banks, the fulfillment of this condition does not, in the present stage of economics, seem to be practicable. The experience of the last few years does not encourage confidence in any sort of cycle analysis as a basis of public policy.

The assumptions of the *Tenth Annual Report* are the assumptions of a certain type of cycle theory, which may be characterized briefly as the doctrine of over- and under-production. Business cycles are viewed as alternations of excess and deficiency of production above and below consumption. When production outruns consumption, goods are piled up in inventories and credit is called forth to carry them. When the load gets excessive, inventories are thrown on the market, prices fall, production declines. When stocks are exhausted, pro-

¹² The standard lays special emphasis on the data relative to inventories, and of all our business statistics these are among the least adequate and probably the least trustworthy.

duction picks up. The cause of the fluctuation is not necessarily to be found in the credit situation, but the credit system furnishes the key to its control. For, if the financing of a boom can be prevented, the conditions which engender the slump are avoided. As it was stated in 1923:

So long as this flow is not interrupted by speculative interference there is little likelihood of the abuse of credit supplied by the Federal Reserve Banks and consequently little danger of the undue creation of new credit. The volume of credit will seldom be at variance with the volume of credit needs as they are reflected in the demands of productive industry as long as (1) the volume of trade, production and employment, and (2) the volume of consumption are in equilibrium.¹³

This theory is in harmony with that to which I have in the past adhered and on the basis of which I have several times ventured to make specific forecasts. But I am not at all certain that it offers an analysis adequate to meet the requirements either of the theorist or of the administrator. The period 1929-31 has engendered much humility among cycle theorists and forecasters, and it is to be hoped among administrators of central banking institutions.¹⁴ Certainly since 1929 it can no longer be assumed that stable or falling prices, moderate reported inventories, and widespread complaints about hand-to-mouth buying necessarily mean that we need not worry about the risk of a business collapse.

The usefulness of central bank activity in checking depression or stimulating recovery in a period of depression is one on which I am not ready to express a positive

¹³ *Annual Report of the Federal Reserve Board*, 1923, p. 34.

¹⁴ Central bankers, however, have always been much more modest in their estimates of their own powers than have many of their critics. Compare L. D. Edie, *The Banks and Prosperity*, 1931, Chap. VI.

judgment. A deliberate expansion of credit designed to offset a spontaneous contraction, if successful, would be a stabilizing factor, just as a deliberate curtailment of credit in a boom may be a stabilizing factor if it offsets an abnormal speeding up of expenditures. Certainly central bank action has been helpful in tiding over acute emergencies,¹⁵ and there seems to be no a priori reason why it should not be effective in checking a business fluctuation before an emergency appears. Given wisdom on the part of the credit administrator superior to that of the business community, it may be possible to improve on the working of the "invisible hand," in a situation where the distribution of optimism and pessimism in the population is not a random one but is shaped by mass psychology.

In practice, however, the difficulties are great, and there is little in the experience of Federal Reserve control in the years from 1922 to 1931 to create optimism as to the probability of stabilizing business through credit control.¹⁶ Any argument from experience is always inconclusive, for no one can know what the results would have been if there had been less, or more, control. But, so far as the evidence goes, the record is not impressive. The business collapse of 1924 was extremely

¹⁵ Compare pp. 70-71.

¹⁶ Compare Walter Stewart's testimony at the hearings on the Strong bill in 1926. Mr. Wingo asked the following question: "Assuming that . . . we are starting down a decline which will ultimately end in the same old story of a depression and idleness before starting up again, is there anything that the Federal Reserve Board or System can do to prevent that approaching depression?"

Mr. Stewart replied: "Nothing that I see that could prevent it. I see various devices to moderate it as far as the credit situation is concerned, to ease the abruptness of the decline and ease the readjustment that takes place during such period." (Hearings on H.R. 7895, Part 2, p. 780.)

severe. For six months, in spite of a vigorous expansion policy on the part of the Federal Reserve system, credit contracted more rapidly than it did in 1920-21. Revival came quickly and the Reserve system claimed some share of the credit for it. But the initiation of the Dawes Plan, the conservative victory at the polls in the United States, and a favorable turn in the agricultural situation all have to be considered as alternative explanations. How much weight one gives to each factor depends on his preconceived theories; the facts do not give us a test of those theories. In 1927 business activity declined much less, and much more credit was poured into the banks—most of it after business had started to pick up, however. In 1930-31 there is no evidence that Reserve system efforts were successful in stimulating business activity, though there is little doubt that in the emergency of the autumn of 1929 and again in the autumn of 1931 the System's capacity for quick expansion staved off a currency panic.

If we could assume that all depressions without credit control would be as severe as the worst that we had before 1913 we could congratulate ourselves on definite achievement in the field of stabilization. But if we compare the record of 1922-29 as a whole with 1909-16 or with 1898-1906, we find no evidence of progress.¹⁷ And the disheartening experience of 1930-32 needs no commentary. At the end of a decade of concentrated effort directed to the maintenance of business stability, we plunged into what is probably the worst depression in a hundred years.

The theory of central bank control of the business

¹⁷ Compare *Recent Economic Changes in the United States*, pp. 890-909.

cycle is that commercial banks cannot afford to hold surplus reserves, and the public cannot afford to hold surplus cash and bank balances. Any purchases of securities by the central banks, and any importation of gold, force the banks to find a use for the new money. They must, so it is assumed, either pay off loans at the central bank, send money out of the country, or expand their own operations by buying bonds and by a more liberal loan policy. The first alternative disappears when the liberal policy has run to a point where rediscounts practically disappear—in the case of the United States fall below, say, 200 million dollars. The second alternative we have already discussed. The third means that the public is put in possession of more cash which burns the pockets of the people just as it first burned the tills of the banks. Thus liberal central bank policy translates itself into increased willingness and ability to buy on the part of the public, and so stimulates business revival.

The difficulty with this program is in the assumption that the response of the banks and that of the public to easy money in times of depression will be the same as it would be in times of prosperity. Depression psychology is ignored. But this is to ignore the central element in the problem. A depression exists precisely because there is a general preference for cash, and for safe short-time investments expressed in cash terms, over commodities and securities. To increase the supply does no good unless the preference decreases. In 1932, for instance, a policy of extraordinarily great open market purchases has been adopted by the Federal Reserve system when the banks are already holding unprecedentedly large quantities of cash and of government securi-

ties; to put them in possession of more cash does not change the conditions which have led them to pursue this policy. Likewise the public, which has absorbed and is holding without interest return a billion dollars of cash in excess of its holdings of a year ago, is not at all certain to change its attitude and become a buyer of goods merely because it has been deprived of a body of its safest investment holdings and given cash balances instead.

In short, there is a fourth alternative. The result of open market purchases in a depression may be simply to pile up idle reserves in banks, and idle balances in the hands of individuals, until the load gets so great that confidence in the currency suddenly disappears—with the usual accompaniments—an accentuated decline of business confidence, budget disorganization, gold hoarding, flight to foreign currencies, and finally complete collapse of the currency system.

With regard to conditions calling for a contraction the case is simpler and the prospects of successful central bank action are greater. If a central bank contracts its outstanding credit—and it can always do so if it is willing to lose revenue and to accept the criticisms which a harsh credit policy always calls forth—the only obstacle to its success in forcing similar contraction in the volume of bank reserves and of public holdings of bank deposits and cash, is the competition of the foreign money market. The experience of 1928-29 conformed closely to what ought theoretically to be expected. Money rates rose sharply. Gold flowed in, but not enough to replace fully the vanished Reserve credit. The public adjusted itself by a tremendous increase in the turnover of bank deposits to doing business on a

smaller equipment of bank balances. But the limits to the possibility of doing this are narrower than the limits to the possibility of absorbing fresh money when it is poured out in a time of depression. The only important limitations on the possibilities of contraction are the size of the central bank's resources and the inflow of funds from abroad. The significance of both these limitations is a function of the size of the country. The central bank of Denmark or of Egypt could hardly hope to check a boom while its nationals had access to the money markets of Paris and London, but the United States or France can more reasonably hope that the total volume of domestic credit and currency will respond appreciably to central bank pressure.

The final limitation, and perhaps the most serious, is the limitation of human foresight and wisdom. So far as the ultimate effects on commodity prices and the volume of business activity are concerned, credit control at best operates slowly and irregularly. To continue a liberal or a restrictive policy until its desired results are visible may be like pouring into a patient one dose of strong medicine after another until he begins to get well—a policy which fails to take account of the normal lag between action and reaction. Credit control of business cycles must be based on forecasts of business conditions and estimates of the lag of results behind measures. And, as was stated above, the present state of the art of business forecasting gives us small ground for optimism as to the feasibility of basing on it a sound effective technique of controlling the state of business.

It would be rash to claim that the policies indicated have no influence in the direction hoped for, though the experience of both England and the United States in

the seventies and the nineties is not encouraging.¹⁸ The experiment which the Reserve Banks are making as this is written will throw fresh light on the problem, but whether it seems to succeed or to fail it will not definitely settle the issue. A dependable sequence of cause and effect in the economic realm can only be established by comparison of numerous similar cases.

In short, aside from the handling of the seasonal problem and of acute emergencies, the stabilization of business by credit control, though not discredited, has certainly not been validated by experience. Given the present large authority of central banks and the present urge that something be done to stabilize business, it is inevitable that further efforts will be made along the lines which have been indicated. The economist can only say that further experimentation is probably worth while but that the experience of the past does not create optimism as to the possibility of flattening out the course of the business cycle by credit control. One of the weightiest arguments in favor of the prescription is that no better one suggests itself.

One factor in the business situation which was conspicuously absent from the analysis described in the report for 1923, and succeeding reports, was the stock market situation.¹⁹ There was some criticism of the Reserve system during 1925-27 on the ground that it was permitting excessive stock exchange speculation,²⁰ but Reserve authorities refused to be drawn into the dis-

¹⁸ Compare J. M. Keynes, *A Treatise on Money*, Vol. II, p. 170.

¹⁹ The references to speculation clearly mean commodity, not security, speculation.

²⁰ See 70 Cong. 1 sess., *Brokers' Loans*, Hearings on S. res. 113 before Committee on Banking and Currency.

cussion. They assumed tacitly that commercial and industrial data were a sufficient guide; that if the stock market—or any other fraction of the money market—exerted an over-stimulating effect on business, that fact would be evident from a direct study of the business situation itself. In this attitude many of the leading unfriendly critics of the System concurred.²¹ By 1928, however, the contrary view became dominant in the management of the Reserve system. The apparent stability of business was no longer allowed to dominate; the repression of excessive stock speculation became the leading immediate objective of policy. In Chapters VII and VIII we shall give attention to this phase of Reserve system history.

The other most important phase of the System's credit policy which is omitted from the statements which were analyzed in the first part of this chapter, is the foreign situation. The "sound credit" policy is in general so described both by Reserve authorities and by their critics as to imply an exclusive interest in and attention to the outlook for domestic business. It is obvious, however, that even in a country as self-contained as the United States, the business situation cannot be viewed in entire detachment from the outside world. And in the decade which we are studying, the foreign situation has been peculiarly insistent in its claims on our attention. This phase of Reserve policy we consider in Chapter VI.

²¹ See testimony of Cassel, Fisher, and Foster in Hearings on H.R. 7895; William T. Foster and Waddill Catchings, "Is the Reserve Board Keeping Faith?," *Atlantic Monthly*, July 1929, Vol. 144, pp. 93-102.

CHAPTER VI

INTERNATIONAL CO-OPERATION

The part played by the Federal Reserve system in the restoration and maintenance of currency stability in Europe has received comparatively little attention from the American public, not necessarily because it is less important than other issues or has played a smaller part in the decisions of Federal Reserve authorities, but because it is an issue too new, and from the standpoint of most Americans too remote and theoretical, to arouse widespread interest.

The co-operation of central banks is a striking development of post-war economic history. The Genoa Economic Conference of 1922, meeting at a time when the United States was the only leading country which maintained the gold standard, recommended that all European currencies should be put on the gold or the gold exchange standard, and that national banks of issue should be established in all countries which did not already have them. It also recommended that the maintenance of exchange stability and of price stability be made primary objectives of the policy of these banks. Resolution 3 adopted by the Conference is of particular interest:

Measures of currency reform will be facilitated if the practice of continuous co-operation among central banks of issue or banks regulating credit policy in the several countries can be developed. Such co-operation of central banks, not necessarily confined to Europe, would provide opportunities of co-ordinating their policy without hampering the freedom of several banks. It is suggested that an early meeting of representatives of central banks should

be held with a view to considering how best to give effect to this recommendation.¹

The meeting of central banks suggested in the resolution has never been held, but there has been a constant interchange of views between authorities of the leading central banks and many cases of co-operative action, sometimes in connection with the establishment of stable currencies and sometimes with respect to policy in controlling movements of credit and of gold between the leading countries themselves.² The most recent developments in this story are the creation of the Bank for International Settlements, and the co-operation of central banks in connection with the financial collapses which occurred in Austria and Germany in 1931. However, the events of the last half of 1931 gave a severe setback to the cause of central bank co-operation; the long feared scramble for gold materialized to a very marked degree, and control of international financial relationships largely ceased to be exercised, even nominally, by central banks.

The aims of central bank co-operation during the decade which ended in the summer of 1931 included the control of gold movements, the minimizing of exchange fluctuations, and assistance in the maintenance of currency stability. Such co-operation was to some extent motivated by a fear that if the pre-war system of free competition were restored, the result would be a scramble for gold which would result in credit contraction and price deflation in strong countries, and in a

¹ *Federal Reserve Bulletin*, 1922, Vol. 8, p. 678.

² Detailed accounts of the co-operation between banks of issue since 1922 are in A. Schweizer, *Die Neue Goldwährung*, 1929, pp. 145-203; in P. Einzig, *The Bank for International Settlements*, 1930, Chap. II; and in Elemer Hantos, *Die Kooperation der Notenbanken*, 1931.

return to unstable credit currency in weaker countries.

This fear arose in part from the recency of attainment of the gold standard in most countries; in part from the disturbing effect of the huge international payments on account of reparations and debts; and in part from the fact that the mass of free funds which might move readily from one national money market to another was much larger than before the war. One of the major portions of this increased fund consisted of the secondary reserves of central banks; another was made up of the holdings of investors who were unwilling to tie up their funds in long-time permanent investments because of recent experience with bad currencies and bad loans. Moreover, the great increase in the volume of government bonds which had a world market enlarged the field of international credit movements.

The part played by the Federal Reserve system in the co-operative efforts of banks of issue to restore and maintain the gold standard would probably have been small if the Reserve Banks had not been faced, as soon as the deflation movement of 1920-21 was over, with problems arising from a tremendous influx of gold—gold which came for reasons almost entirely independent of the needs of American business and which threatened to take the control of the credit situation in this country entirely out of the hands of the Reserve system.³ This affected our foreign relations in two ways:

First, the excess of gold above legal reserves gave the Reserve authorities much more room for the exercise of discretion than they would have had under more normal conditions. Freedom of the Reserve authorities from pressure to maintain their required re-

³ Compare p. 15.

serves gave rise to a demand that they co-operate to a greater degree than would otherwise have been possible, just as it has given rise to demands from domestic sources that they direct their energies to tasks which no one would have expected them to accomplish if they were working with narrow reserve margins.

Second, the existence of these excessive gold stocks has created a presumption in the minds of foreign observers that the United States has the power, by "releasing" this gold, to create easier credit conditions throughout the world. There exists in Europe a widespread, and quite baseless, notion that the world is short of gold, and that the shortage is accentuated by a bad distribution of existing stocks. The downward trend of prices which began in 1925 and culminated in the collapse of 1930 is believed by many theorists, especially in England, to be at once the result and the proof of this shortage.⁴ Naturally, this point of view suggests that those nations which have excessive gold stocks, especially France and the United States, have a peculiar responsibility to co-operate with other countries in the maintenance of the gold standard, and in supporting the price level.

*The international contacts of the Reserve system have taken four principal forms.*⁵ First, there are serv-

⁴ Compare *First and Second Interim Reports of the Gold Delegation of the League of Nations*, 1930 and 1931; Sir Henry Strakosch, "The Economic Consequences of Changes in the Value of Gold," *League of Nations Document C.374. M. 160. 1930. II*; Gustav Cassel, "The Shortage of Gold," *Skandinaviska Kreditaktiebolaget Quarterly Report*; October 1926; "Gold Production and Gold Value," *ibid.*, January 1927.

⁵ It is too early to discuss the bearing of the creation of the Bank for International Settlements on the international relations of the Reserve system. The founders of the bank planned to make the Federal Reserve Bank of New York the American member of the System, a plan which was upset by the prompt objection of our Department of

ice relationships, such as the purchase for foreign correspondents of bills which are endorsed by the Reserve Banks; earmarking of gold; and the exchange of services in connection with the organization of statistical departments. Second, direct aid has been given to various European countries through the Reserve Banks' participation in stabilization loans. Third, on a few occasions bills payable in foreign currencies have been bought for the avowed purpose of supporting the exchange of the countries concerned. Fourth, it is claimed that indirect aid has been given by keeping discount rates at levels which facilitated the maintenance of gold reserves in Europe. The evidence on this point requires scrutiny, and will be considered below.

The most important international service relationship of the Federal Reserve Banks is the purchase of bills for foreign correspondents. As is shown below,⁶ a very substantial proportion of the outstanding bank acceptances in the United States market are held by the Federal Reserve Banks for the account of foreign correspondents, with the endorsement of the Reserve Bank. In maintaining this relationship with foreign correspondents (chiefly central banks) the Reserve system accomplishes two purposes. First, as is shown more fully in Chapter XII, it opens up an important source of support for the American bill market; and second, it facilitates the maintenance of reserves of dollar exchange by European central banks.

State. The substitution of a private banking house for the Reserve Bank safeguards the United States from official responsibility, but it is probable that the real controlling influences are the same as if the original plan had been carried out.

⁶ See p. 258.

Direct aid in the stabilization of European currencies has been extended through actual gold loans and through agreements to furnish gold on demand. In 1925 secured loans were made by the Reserve Banks to the Bank of Poland and to Czechoslovakia. In the same year the stabilization of the currency of England was underwritten by an agreement to extend credit on demand. In succeeding years similar arrangements were made with Belgium, Italy, Rumania, and Poland.

The arrangement with the Bank of England, which involved much the largest amount, was as follows: The Federal Reserve Bank of New York agreed to sell gold to the Bank of England at any time within two years, up to a limit of 200 million dollars, taking in exchange an equivalent deposit credit in sterling in the Bank of England. For this "credit" the Bank of England was to pay interest.⁷ No part of this credit was actually used.

The Reserve Banks have occasionally bought acceptances payable in foreign currencies for the purpose of supporting the value of those currencies. Ordinarily the total holdings of foreign bills of all the Reserve Banks are in the neighborhood of a million dollars—a completely negligible element in total investments of from one to two billions.⁸ On three occasions, however, hold-

⁷ One per cent above the rediscount rate of the Federal Reserve Bank of New York, but not more than 6 or less than 4 per cent, unless the Federal Reserve discount rate exceeded 6 per cent, in which case the rate was to be the same as the discount rate. The sterling deposit might be used in the purchase of sterling commercial bills, guaranteed by the Bank of England, the discount earned on the bills being applied to the payment of interest.

⁸ Holdings of foreign bills have been reported separately only since 1925 and the reports do not indicate the composition of the portfolio by separate currencies. Information given by certain Federal Reserve Banks in response to a questionnaire issued by the Senate Committee on Banking and Currency in 1931 makes possible a close approxima-

ings have been materially increased for the avowed purpose of aiding foreign central banks to maintain the value of their own currencies. In the summer of 1927 about 10 to 11 million dollars worth of sterling bills was carried for about four months. In the summer of 1929 about a million dollars was invested for a short time in Hungarian pengos "in co-operation with central banks of England, France, Belgium, and The Netherlands, to strengthen the position of the National Bank of Hungary in dealing with Hungarian foreign exchanges."⁹ Later in the same year about 16 million dollars of sterling was bought "to relieve some of the pressure on sterling exchange and to help stay the flow of gold from London to the United States."¹⁰ Again in the autumn of 1930 sterling was bought, the amount held in December running over 30 million dollars. Concerning the expansion of holdings of foreign bills in these three years the Federal Reserve Bank of New York says:

... We purchased foreign exchange at a time when it was weak and we were threatened with the importation of gold. We sought to support exchange by our purchases and thereby not only prevent the withdrawal of further amounts of gold from Europe but also, by improving the position of the foreign exchanges, to enhance or stabilize Europe's power to buy our exports. In fact

tion of the distribution, however. In addition to the currencies mentioned in the text, there have frequently been holdings of French francs but the amount apparently has never been more than one million dollars at any one time. (71 Cong. 3 sess., *Operations of the National and Federal Reserve Systems*, Hearings on S. res. 71 before Committee on Banking and Currency, Part 6, pp. 901-03.) Total holdings are reported by months in the annual reports of the Federal Reserve Board for each year beginning with 1926.

⁹ Federal Reserve Bank of San Francisco, reply to Senate questionnaire. (Hearings on S. res. 71, Part 6, p. 903.)

¹⁰ *Ibid.*

our efforts to support exchange were undertaken in the autumn during our heaviest export season when the foreign exchanges are normally under pressure, and these operations were liquidated when the seasonal strain had passed, our goods had been moved, and the position of the foreign exchanges had improved.¹¹

It is to be noted that even at the maximum these holdings are a very small item in the London discount market. The total amount of foreign deposits and bills held on foreign account in that market ran, in 1929, in the neighborhood of two billion dollars.¹²

Bills were bought again as a result of the European financial crisis of the summer of 1931. On June 24 the Federal Reserve Bank of New York, in association with other Federal Reserve Banks, agreed to purchase commercial bills from the German Reichsbank on request, up to an amount equivalent to about 25 million dollars. This agreement was made in co-operation with the Bank of England, the Bank of France, and the Bank for International Settlements, as part of a credit which aggregated approximately 100 million dollars. This agreement was repeatedly renewed and has not yet been liquidated in full.

On August 1 the Federal Reserve Bank of New York announced that in association with other Federal Reserve Banks it had agreed for three months to purchase bills from the Bank of England, as requested, up to approximately the equivalent of 125 million dollars. This arrangement was made in co-operation with the Bank

¹¹ *Ibid.*, p. 901.

¹² The aggregate of deposits and sterling bills held in London on foreign account was reported as of June 20, 1929 at 417 million pounds sterling. *Report of the Committee on Finance and Industry* ("Macmillan Report"), 1931, p. 43. Keynes' estimate is much higher. See *Lloyd's Bank Monthly Review*, April 1932, p. 148.

of France, which agreed to take the same amount of bills. On expiration of the contract it was renewed in the amount of 75 million dollars.

Detailed data as to the amount of bills purchased under these agreements has not been made public, but the total amount of bills payable in foreign currencies held at the close of the month exceeded 35 million dollars only twice. On August 31 the total of such bills was 145 million dollars; on September 30 it was 49 million. These figures are to be compared with 36 million held at the close of 1930, when no such emergency agreements were in force.

Indirect aid may have been extended by keeping money cheaper in America than it would have been otherwise. It is impossible to make a definitive statement on this point because one cannot separate the international factor in Federal Reserve policy from other influences which worked in the same direction, and the direct official evidence is scanty. In a statement prepared in 1924 Governor Strong included the international situation among the reasons for the pursuance of an easy money policy in that year.¹⁸ It was stated in the annual report of the Reserve Board for 1925 that the credit arrangements with the Bank of England involved no commitment as to the policies to be pursued by either Bank in dealing with domestic credit conditions or with changes in discount rates. In 1927 the Re-

¹⁸ "By directing foreign borrowings to this market to create the credits which would be necessary to facilitate the export of commodities, especially farm produce.

"To render what assistance was possible by our market policy toward the recovery of sterling and the resumption of gold payment by Great Britain." (69 Cong. 1 sess., *Stabilization*, Hearings on H.R. 7895 before Committee on Banking and Currency, Part 1, p. 336.)

serve authorities cited both the international situation and the depressed state of business as reasons for their decision to make heavy purchases of securities.¹⁴

In May of that year, a conference was held at New York between representatives of the central banks of England, France, and Germany, and the Federal Reserve Bank of New York. No statement was given out at the time as to the business transacted at this meeting,¹⁵ but it seems probable that definite commitments were made by Governor Strong as to the discount policy which he would urge upon the Federal Reserve system. There is no reason to believe, however, that any such commitments were made by the Federal Reserve Board; indeed it appears that the representatives of foreign central banks did not confer with the Board as a whole, or with its members, except in a very informal and casual way.¹⁶

¹⁴ "During this period it also became evident that there was a serious credit stringency in European countries generally, and it was felt that easy money in this country would help foreign countries to meet their autumn demand for credit and exchange without unduly depressing their exchanges or increasing the cost of credit to trade and industry." (*Annual Report of the Federal Reserve Board, 1927*, p. 10.) Compare above, pp. 47-48.

¹⁵ A statement given to German press representatives in New York by Dr. Hjalmar Schacht embodies the only authentic information available to the public concerning this conference. Dr. Schacht stated that the central point in the discussion was the question of gold shipments, concerning which no definite agreement was reached though it was his expectation that in the future there would be a better mutual understanding among the larger central banks with regard to international shipments of gold. Likewise with regard to the question of rediscount rates, it was agreed that the need and interest of each country must be decisive, but a closer contact and understanding in the interest of all was probable. (*Hamburger Fremdenblatt*, July 14, 1927, and other German periodicals issued about that time.)

¹⁶ 70 Cong. 1 sess., *Stabilization*, Hearings on H.R. 11806 before Committee on Banking and Currency, pp. 216-20 (testimony of A. C. Miller).

Since that date there has been close contact between the Federal Reserve Bank of New York and the leading central banks of Europe. Governor Norman of the Bank of England made several trips to America, and representatives of the Federal Reserve Bank of New York have frequently been in Europe. Very little information concerning these conferences is made public. Hence our conclusions as to the influence on our policies of the needs and desires of European banking authorities must be inferred from a scrutiny of the record of the administration of Federal Reserve credit.

Nothing was heard of international co-operation in connection with discount or open market policy in 1922, 1923, 1925, or 1926, and it is patent that the policy pursued in 1928-29 ran directly counter to the wishes of most foreign banking authorities. The tightening of the market in the last half of 1931 was also clearly an act of self-protection against European policy rather than of co-operation with it. The cases which are cited as evidencing a regard for European needs (an undue regard or a due regard, according to the point of view of the commentator) are the policies of 1924, 1927, and 1930-31. These, it will be noted, are the three outstanding cheap money eras. Co-operation, so far as American co-operation is concerned, always means a policy directed toward inflation. When we pursue a cheap money policy it is easier for European countries to keep gold at home or to draw it from us, and such action is interpreted as evidence of international co-operation.

Let us examine the three cases with a view to determining whether they can reasonably be explained on any other basis than that of international co-operation. For it is to be expected that in the course of ten years

there will be some periods which conform, if only by chance, to the requirements of almost any theory. In 1924 there was a very sharp decline of business activity in the United States. The decline was of such short duration that its severity is not generally recognized, but none more precipitate occurred in any similar period since the war, not excluding 1930-31. The British situation furnished a supporting argument with which to defend a cheap money policy but a dear money policy was hardly thinkable. Again in 1927 a cheap money policy was adopted at a time when domestic employment was receding and production and prices were falling, though not so sharply as in 1924. Had there been no thought of international co-operation, the Reserve system policy would undoubtedly have been directed toward easing the money market, but it is probable that in this instance a smaller amount of credit would have been poured into the money market.

Finally, in 1930-31, it is obvious that domestic rather than international considerations have been the primary factor justifying the cheap money policy, though the exact time and extent of some of the rate reductions of 1930 may have been influenced by the European situation. In short, the three "co-operative" eras, 1924, 1927, and 1930-31, are precisely the periods when the domestic situation, interpreted in the light of the avowed standards of the Federal Reserve system, was such as to indicate a policy of easy money, whether we wished to co-operate or not.

The other notable thing is that the British case for cheap money was just as cogent when American rates were being raised in the autumn of 1925 as in 1924 and 1927, and was still more cogent in 1929. Whenever

domestic policy has seemed to call for a tightening of the money market, no attention has been paid to evidences of distress in foreign money markets. It appears, therefore, that European advice and European needs and desires have at most been influential in regard to the degree of inflationary or deflationary effort; they have not led the Reserve authorities to try to move the money market in a different direction from that toward which pressure would otherwise have been exerted.

We conclude that there is a great deal of exaggeration in current reports as to the amount of attention which has been given to international considerations in determining the policy of the Federal Reserve system. Governor Strong was an ardent advocate of the idea that there should be extensive co-operation between central banks, and for several years he was probably the most influential person in the system. But it is not a one-man System, and the indications are that the majority of those who are responsible for the determination of the System's policy have never taken the international arguments very seriously. When it is necessary to defend a past action, all the arguments which support it are marshalled, and at times the international situation has been a convenient element in the structure of "reasons."

Appraisal of the merits of the international phase of Reserve policy must be tentative for the same reason that our statement of the facts is indefinite. We are not informed fully of the facts of the international relationships of the Reserve Banks; still less do we know as to the detailed representations which have led to the adoption of such and such policy. However, two or three generalizations may be ventured.

First, as to the participation of the Reserve system in stabilization loans: The importance of the objective aimed at in these arrangements must be conceded. The stabilization of the exchanges in the leading countries of Europe was a matter of primary importance to the world and if the Reserve authorities had put it ahead of minor considerations of domestic policy, their action would have commended itself to intelligent public opinion.

The primary purpose of a credit granted in connection with a stabilization program is to create confidence. No matter how sound a basis the budgetary and trade situation may afford for the establishment of the gold standard in any country, an essential step in stabilization is the creation in the public mind of a habit of thinking of the currency unit as the equivalent of a definite amount of gold or gold exchange. The co-operation of other banks, especially of central banks, can be a powerful agent in the creation of such confidence.

The fact that the stabilization credits extended to Europe were not used is an indication that the countries to which they were extended had already succeeded in putting their financial houses in good enough order to justify acceptance of their credit currency at its face value; the fact that the credits were available may well have been an essential step in educating the public to this fact, and a necessary safeguard against excessive demands for redemption of currency before the relatively sound conditions of the budgetary and trade situation became apparent.¹⁷

¹⁷ It is not intended here to pass judgment on the question whether all of the currencies which have been stabilized were actually as sound as they were made to appear.

Let us consider next the general credit policy. As we have indicated, the evidence suggests that the Federal Reserve system has not actually co-operated in this way to anything like the extent that is generally assumed. Probably the only significant case is the pursuit in 1927 of an easy money policy somewhat more vigorous and prolonged than would otherwise have been the case. Assuming, however, that the Federal Reserve system has been influenced to a greater extent than we have indicated, is such action to be worthy of endorsement or condemnation?

The merits of the first objective mentioned on page 100—the support of the bill market—will be given consideration in Chapters XII and XVII and need not be reviewed here. The second objective, facilitation of the maintenance of dollar exchange reserves by foreign banks, I am disposed to endorse, but without enthusiasm. The question involves the merits of the gold exchange standard as it developed in Europe after 1924.

The common post-war practice of carrying reserves in the form of deposits and short-time bills in foreign stable currencies has obvious advantages. The accumulation of such reserves makes possible a paper showing of greater strength than would be possible if a nation's currency rested only on the amount of gold which it was able to accumulate in its own vaults. Given existing traditions as to desirable reserve ratios, the gold exchange standard is a method of economizing gold. It is particularly valuable in tiding over the period of acute distrust which accompanies the period of the initiation of a stable currency. But as a permanent system it offers serious disadvantages. Reserves of foreign exchange make the position of any one banking system which uses

them stronger than it would be if they were wiped out and nothing else was changed. But from the standpoint of the whole complex organization of banking and currency of the Western World, they are a source of great weakness. They make possible smaller gold reserves in the countries which hold the foreign balances, but they necessitate bigger gold reserves in the countries in which the balances are held. Moreover, they are a potential source of international friction, and are a very uncertain resource when the need for liquidation arises.

In the gold exchange standard, the world has revived in international finance a system which was thoroughly tried in American domestic finance before 1914, when we used inter-bank balances, pyramided on the New York reserves, as reserves for the country banks. The impossibility of realizing on these reserve balances in times of great pressure was a prime weakness of the earlier American banking system; the same weakness pervades the world organization of banking and currency today.

This, however, is not a serious criticism of the decision of the Reserve authorities to co-operate to the extent involved in acting as an agent for the purchase of bills for foreign central banks and the acceptance of the nominal risk involved in their endorsement. When the practice began, the most urgent need was the establishment of stable currencies. It might have been better as a long-run policy to establish them with smaller nominal reserves, all held in the form of actual gold, but this decision was not for the Federal Reserve system to make. Given the existing system, the co-operation of the Federal Reserve in handling sight exchange and bills for foreign banks has been a useful service.

Finally we come to the most important phase of the question: How far ought the discount and open market policy of the Federal Reserve system to be "co-operative"? Should we agree with the position taken by Governor Schacht of the Reichsbank in 1927,¹⁸ that the best plan is for each country to pursue the policy indicated by its own internal situation and let other countries govern themselves accordingly? Or, is it better that each should seek the common good of all?

In answer it is to be emphasized first that, as was noted above, the plea of the internationalists has at all times since the issue arose been a plea for cheap money. And basically the international arguments for cheap money have been the well-worn arguments for cheap money at home—relief to debtors and stimulation of business enterprise. True, the case has been phrased in the post-war era largely in terms of the maintenance of the gold standard, whereas in former times it has often taken the form of an attack on the gold standard. But the ease or difficulty of maintenance of a metallic standard is in large part a question of cheap money versus dear money. If money is made cheaper in one country than it is in others,¹⁹ the standard is harder to maintain in that country. For the maintenance of the gold standard in a given country requires that that country, unless a gold producer, shall not meet its foreign payments year in and year out by gold shipments. It must meet them either with goods and services, or by continually increasing its debt. Low discount rates at a central bank and liberal open market policy lead domestic borrowers to satisfy their need for funds out of the proceeds of do-

¹⁸ Quoted by A. C. Miller. (Hearings on H.R. 11806, p. 220.)

¹⁹ After allowance for differences in risk as estimated in the market.

mestic credit expansion rather than by borrowing abroad, and thus cut down the "favorable" balance of international payments; cheap money diverts floating balances to competing money markets, and encourages imports and discourages exports. The balance of payments becomes adverse, and gold moves out. Thus every central banking system which yields to domestic pressure for cheap accommodation is likely to find difficulty in maintaining itself on a gold basis.

This foreign pressure on the gold reserve is an automatic check on inflation, but if all countries expand credit together, the check does not operate. Hence a country with a weak gold standard if it can instigate a credit expansion abroad can postpone or avoid the necessity of curtailing credit at home. International co-operation to support the gold standard (except in so far as it involves a temporary support during the transition from an unstable to stable currency, or during some subsequent emergency which causes a run on reserves) is the maintenance of a cheap money policy in order that foreign countries may also pursue a cheap money policy without suffering the loss of gold.

Central bank action calculated to help foreign central banks to tide over emergencies, like central bank action designed to carry domestic business through a seasonal or other temporary strain, may be extremely helpful. But central bank expansion designed to alleviate chronic pressure on the exchanges of any country, like central bank expansion designed to effect a continuous inflation of domestic prices, is a substitution of stimulants for sustenance.

Continuous pressure on the exchanges of one country is an indication that some change is needed in the pol-

icies of that country. Continuous support of the currency by other nations may mean simply that it will be possible to carry further the policies which are reflecting themselves in a weakening of the exchanges. The weakness may consist of a disposition to lend excessively abroad; it may be a central bank credit policy which results in demand for credit in excess of the savings capacity of the country; or the trouble may center in a bad trade situation which may arise from either political or industrial conditions in competing countries, crop conditions, a wage level too high for the productive capacity of the country, and so on. Any or all of these causes may give rise to a condition which is beyond the power of any bank policy to cure; to disregard them and attempt to maintain a money market rate structure based on pre-war traditions is to make certain that the exchange will be under continuing pressure.

The crux of the problem in recent years has been the situation of Great Britain. For reasons which cannot be analyzed without carrying this discussion too far afield, the actual financial position of London in the years from 1925 through 1930 was much less strong than it was before the war. London's psychological strength had also been lessened by the recent break in its long tradition of an absolutely free gold market. Whenever open market money rates were higher in New York than in London, bills moved eastward and soon gold began to move westward. England was not drained of gold, but she kept practically none of the new gold which flowed to her from the mines of South Africa. From the time of her currency stabilization in 1925 the gold reserves and the earning assets of the Bank of England showed re-

markable stability, as did also the deposits of the principal commercial banks.

In accordance with British tradition, the gold reserves were protected by maintaining discount rates at a level sufficiently high to attract foreign balances and keep down any tendency to credit expansion. The credit of London was so high that it proved to be possible to attract enough floating capital to maintain stability of the exchange for six years without precipitating an internal deflation. The level of interest rates in Great Britain relatively to that of other countries was higher than it had been before the war, but not high by the standards of the United States. But even such a moderate use of the discount rate was distasteful to a large section of the public. There is in Great Britain widespread acceptance of the idea that business prosperity is highly dependent on the level of money rates. As there has been serious and persistent depression in key industries ever since 1921, there is powerful opposition to every increase of the discount rate. A very important element of public opinion was opposed to the restoration of the gold standard in 1925, favoring the idea of a "managed currency," that is, an irredeemable paper currency kept stable in value by regulation of its quantity, without regard to gold movements.

It is obvious that the same result which was sought by holding up discount rates might be attained by a lowering of the rates in America and in France. The new philosophy of central bank co-operation made it possible to attack the problem from this angle by diplomatic effort (exercised through financial, not official diplomatic, circles). For America to "co-operate" in credit policy

meant in general that the Federal Reserve system should make it possible for England to stay on the gold standard without protecting its currency by interest rates as high as would have been necessary if American policy were based solely on domestic considerations.

I do not believe this would have been a sound line of policy from the standpoint either of Great Britain or of the United States. It would have been an attempt to correct the mistake made in 1925 by stabilizing the pound at a level out of line with the price and wage level of the country, not by reversing that action or by bringing the internal price level into a more appropriate relationship to the value of the pound, but by a dangerous credit inflation in America and in France.

Finally, there is the question of technique. If it is desired to support and stabilize the foreign exchanges and protect the gold reserves of European countries, the logical device for the purpose seems to be the purchase of bills drawn in those currencies. Bills payable in foreign currencies are an important asset of most foreign central banks and are eligible for purchase under the Federal Reserve Act, but as we have noted, the amounts held by the Reserve Banks have ordinarily been negligible, and even when they have been expanded for the purpose of supporting the exchange of foreign countries, the purchases as a rule have been very small in proportion to the size of the markets which they were supposed to influence.

It would seem a better policy to put credit directly into foreign markets than to pour it out into our own in the expectation that a part of it will overflow into the foreign markets which it is desired to support. The discount and open market procedure which was used in

1927 was effective only with a time lag, and its collateral results on the domestic financial situation were more conspicuous than the effects which it was desired to produce abroad.

The conclusions of this chapter may be summarized as follows: International co-operation has been a less important factor in Reserve system policy than is generally believed, and it is well that this is so. Aside from the relatively unimportant service relationships and the more significant participation of the Reserve Banks in stabilization loans (in which the prestige of the lenders was of more importance than the actual advance of funds), the pressure to co-operate has been pressure to pursue an unsound policy, in order to shield other nations from the consequences of their own unsound policies. So long as "co-operation" is conceived in these terms, the less we have of it the better.

CHAPTER VII

THE RESERVE BOARD AND THE STOCK MARKET: THE TECHNIQUE OF CONTROL

As has been noted elsewhere, one of the primary purposes in the minds of many of those who participated in the formulation of the Federal Reserve Act was to discourage speculation, or at least to curtail the use of bank credit to finance stock exchange operations. The Federal Reserve Act provides that the Federal Reserve Banks may discount notes, drafts, and bills of exchange arising out of commercial transactions, "but such definition shall not include notes, drafts, or bills, covering merely investments or issues drawn for the purpose of carrying or trading in stocks, bonds, or other investment securities except bonds and notes of the government of the United States."¹ Stocks and bonds of corporations are not included among the securities eligible for purchase in the open market, and securities used as collateral for direct advances to member banks must be such as are eligible for rediscount or purchase by Federal Reserve Banks.

Throughout the life of the Federal Reserve system there has been a wide variety of views among both its representatives and its critics as to what is the proper responsibility of the System toward speculation in securities, and also with regard to the efficacy of proposed methods of exercising control over the speculative markets.

With regard to objectives, the most popular theory

¹ Federal Reserve Act, Section 13.

holds the System responsible for conservation of the limited supply of credit for other uses which are deemed more important than is the speculative use. This was the dominating view among the framers of the Act and has apparently been the most important strand of thought in the Reserve Board itself.² But in more recent discussions precisely the opposite line of argument has been used to support a similar conclusion. It is held that speculative booms make it unduly easy for industrial concerns to obtain capital through the issuance of securities, and that the over-expansion of certain types of business is thereby fostered. That there has been little consciousness of the contradictory character of these two points of view is evidenced by the following quotation from an address made by an official of the Federal Reserve system in 1925:

Neither are the operations of the stock market the concern of the Federal Reserve system, except when the stock market is absorbing credit that is needed in general business, as was the case in the fall of 1919, or when the activity of the market and the rapid advance of many stocks threatens to breed a speculative fever which is liable to spread to commodities.³

Finally, there is the view that the influence of the Reserve system should be thrown against speculation because of ethical and social reasons. This view has had little weight in Federal Reserve circles but has frequently been brought forward by Congressional critics

² As a matter of theory the idea that the stock exchange absorbs credit has been subjected to scarcely any critical examination in this country, though it has long been the subject of learned debate among Continental European economists. Compare pp. 161-73.

³ George W. Norris, quoted by George E. Roberts, "Federal Reserve Control of the Money Market," *American Bankers Association Journal*, December 1925, Vol. XVIII, No. 6, p. 448.

of Reserve system policies. Opposition has also been voiced on the ground that the distribution of speculative profits leads to extravagance.

In the following pages we shall trace the dealings of the Reserve system with the problem of control of speculation. As in previous chapters, we shall first trace the record of stated policies and of actual practice, then appraise the merits of the policies which have been pursued.

In the early post-war period Reserve authorities expressed official opposition to the use of Reserve credit for security speculation. The necessity for the Federal Reserve Board to define its attitude toward a speculative boom first arose in a serious way in 1919. The Board's attitude at this time was expressed in a letter to the Federal Reserve agents, dated June 10, 1919, which read as follows:

The Federal Reserve Board is concerned over the existing tendency towards excessive speculation, and while ordinarily this could be corrected by an advance in discount rates at the Federal Reserve Banks, it is not practicable to apply this check at this time because of government financing.⁴

Again on July 9 the Board said:

It is not the function of the Treasury nor of the Federal Reserve Banks or the banking institutions of the country to provide cheap money for stock speculation, and the Board feels that the reflex action of the rates for call money on stock collateral upon the government's financial program and the requirements of commerce and industry has greatly decreased, . . . and will continue to decrease as it becomes better and better understood that the true function of the banking institutions of the country and of the Federal Reserve system, acting in their aid, is, subject

⁴ *Commercial and Financial Chronicle*, June 14, 1919, Vol. 108, p. 2390.

to the temporary requirements of the government, to finance commerce and industry. . . .⁵

In the succeeding months the Board repeatedly called attention to the dangerous speculative tendencies which it believed to be prevalent, but it was not until the end of the year that it found itself at liberty to give money market conditions precedence over Treasury requirements in determining its own policy.⁶ When rates were first advanced in November the Federal Reserve Bank of New York issued the following statement:

The reason for the advance in rates announced today by the Federal Reserve Bank of New York is the evidence that some part of the great volume of credit, resulting from both government and private borrowing which war finance required, as it is released from time to time from government needs, is being diverted to speculative employment rather than to reduction of bank loans. As the total volume of the government's loans is now in course of reduction, corresponding reductions in bank loans and deposits should be made in order to insure an orderly return of normal credit conditions.⁷

For a number of years little attention was paid to keeping credit out of the stock market. After the collapse of the boom in 1920 the question of the relationship between Federal Reserve credit and speculation did not again come to public attention until the fall of 1925, when the upswing of stock prices and the increase of speculative activity which had started in the summer reached such a point as to call forth renewed expressions of apprehension lest the Federal Reserve system might

⁵ *Ibid.*, July 12, 1919, Vol. 109, pp. 130-31.

⁶ Compare p. 8.

⁷ *Report on Business Conditions*, Second Federal Reserve District, Nov. 20, 1919. The statement probably refers to commodity as well as security speculation.

be allowing its resources to be drawn upon for speculative purposes. There was much opinion to the effect that the advances in discount rates which were made in the fall of 1925 were motivated in part by a desire to keep the stock market speculative situation in check, but this was not the official explanation.⁸ At this time, however, the dominating point of view in Federal Reserve circles was unfriendly to any serious effort to control the use to which member bank funds were put so long as the provisions of the law covering the issuance of the credit was observed.⁹

The changes in rates which were made in 1926 appear to have been intended to support the stock market rather than to check speculation. As was noted on page 46, 4 per cent rates prevailed during the year 1926 except for a reduction of the New York rate to 3½ per cent in April, and its restoration to 4 per cent in August. Likewise, the only change in open market policy was the purchase of 65 million dollars worth of securities in the spring, and the sale of 75 million dollars worth in the early autumn. The easing of the money market in the spring and the restoration of the old rate and the old policy of open market holdings in the fall were never explained by Federal Reserve authorities with the fullness which usually characterizes Federal Reserve publicity. The annual report of the Board for 1926 stated that the reduction was made "at a time when there was a large volume of liquidation of bank loans

⁸ "In the absence of evidence of speculative attitude among commercial users of credit, the Reserve system was unwilling, for the purpose of exercising a measure of restraint upon those who were borrowing in order to carry or deal in securities, to raise the discount rate at New York." (*Annual Report of the Federal Reserve Board*, 1925, p. 6.)

⁹ See below, p. 127.

in New York City, a decline in open market money rates, and an apparent slowing down in some lines of business activity." The increase in August was described as having occurred "when there was a rapid growth in security loans, an advance of money rates in the open market and an increase in the volume of Reserve Bank credit outstanding."¹⁰

This characterization of the business situation in 1926 is correct as far as it goes, but it reads like *Hamlet* with the Prince of Denmark left out. The outstanding facts in the credit history of the year are that the New York Bank rate was reduced and 65 million dollars of government securities were purchased in response to a sudden decline of 10 per cent in the average of stock prices, and that the rates were restored and the securities sold when the stock market had made back the lost ground. Up to that time, and in fact up to the time of the stock panic of 1929, Federal Reserve authorities consistently denied any responsibility to support the stock market, but any one who was at all cognizant of the business and financial situation in 1926 could hardly doubt that the most important cause of the rate manipulation of that year was the stock market recession and not the trifling recession of business activity.

In 1927, as has been noted elsewhere, the Reserve system committed itself to an extremely vigorous easy money policy, motivated in part by an interest in the business situation and in part by a desire to support the European exchange. By the end of this year, however, the stock market boom, which had not been checked by the mild depression, became so violent that Reserve authorities agreed, apparently without serious dissent,

¹⁰ P. 3.

that steps must be taken to damp it down. Agreement as to the end was not, however, accompanied by agreement as to the means. The unity of purpose only brought to light a long-standing disagreement concerning the most effective technique of Reserve operations. This issue we must consider before we carry the story further.

Two divergent views of the power of the Reserve Banks can be traced through the post-war history of the System. One view, which for convenience we shall call the New York theory, holds that the only way in which it is practicable for the Reserve system to exert any important influence over the credit situation is by direct or indirect control of the volume of reserve available as a basis for member bank credit. In accordance with this viewpoint the Reserve Banks cannot discriminate between applicants for credit, so long as these applicants present eligible paper for rediscount or satisfactory collateral, but can only influence the situation by adjusting the rates upward and downward or by open market operations. The other viewpoint, which may be called the Washington theory, stresses qualitative control. It holds that it is the duty of the Reserve Banks to look back of the collateral offered by the prospective borrower and take cognizance of the purpose for which the borrower proposes to use the funds, discriminating against speculative and in favor of "productive" demands. The first of these views is associated especially with the name of Governor Benjamin Strong of the Federal Reserve Bank of New York; the latter with that of Adolph C. Miller of the Federal Reserve Board. The two views can be traced from the early post-war period to the hearings on the Glass bill in 1931, though there was

no open clash over the issue, nor any public debate on it before 1929.¹¹

Governor Strong said in 1926:

I hope this discussion has some sympathetic reception by the members of the committee from this point of view—that the most that the System can do is to exercise influence as to the quantity of the whole volume of credit, what the total sum of it shall be, and what it shall cost. That is the influence we exert.¹²

After sketching an illustrative case in which a transfer of funds from a bank to a trust company resulted in an increase of stock market loans on the part of the trust company and an increase in borrowing at the Federal Reserve on the part of the bank, Governor Strong went on to say:

You may say that is \$2,000,000 of Federal Reserve funds gone into the speculative market. As a matter of fact, that is what will happen despite anything that we may do. If we create an addition to the volume of credit by our open market operations or by our discounts the banks which get it pass it along through all the channels through which credit circulates in our banking system—and we can not control what happens to it. Some of it will go in one direction and some of it will go in another, and the nature of the use of our funds is perfectly impossible to control. . . .

To carry your question a little further, suppose this bank "A" on a certain day makes a loan of \$100,000 on Pennsylvania Railroad stock, also buys \$100,000 of foreign exchange, also buys \$100,000 of banker's bills representing a movement of

¹¹ It may be added that neither of these views is confirmed by an earlier investigation in which I had a part, in which it was shown that the pace of speculative activity bears little, if any, relation to changes in the cost of short-time money—a conclusion which has been confirmed by the events which have taken place since the last revision of the work in question. (Richard N. Owens and Charles O. Hardy, *Interest Rates and Stock Speculation*, rev. ed., 1930.)

¹² 69 Cong. 1 sess., *Stabilization*, Hearings on H.R. 7895 before Committee on Banking and Currency, Part 1, p. 340.

commodities, and buys \$100,000 of government bonds, and sustains net loss of \$100,000 of deposits. There is \$500,000 of funds that it has paid out. It has \$300,000 of its loans repaid. That leaves it still \$200,000 short in its reserve, and it must borrow it from us. . . . Shall we say that the \$200,000 borrowed from us was used for buying Pennsylvania Railroad stock or buying government bonds or buying foreign exchange or buying banker's bills representing movement of commodities or to make good a loss of \$100,000 of deposits. There is no way of telling. It is all in the way you look at it.

Mr. Wingo. In other words, you can control the volume and price of credit, but you can not control the purpose for which the persons getting that credit use it?

Governor Strong. It can not be done.¹³

Likewise Burgess wrote in 1927:

It is thus impossible for a Reserve Bank to dictate how its credit shall be put to employment. It cannot, for example, restrict loans on the stock exchange and at the same time encourage loans to the farmer. Reserve Bank loans to a farming community bank may, and often do, find their way promptly to the stock exchange money market. The specific use of credit is the business of the individual member and non-member bank, and the Reserve system is no substitute for sound banking practice. . . .

It is the business of the Reserve system to influence the amount of credit in use, and try to bring about a proper adaptation of the total volume of credit to the volume of business.¹⁴

This view was still held by representatives of the New York Reserve Bank in 1931, as is shown clearly by the statement submitted by that Bank in response to a questionnaire which was sent out by the Senate Committee on Banking and Currency in connection with the hearings on the Glass bill, and by Governor Harrison's testimony before that committee.¹⁵ The contrary doc-

¹³ *Ibid.*, pp. 340-41.

¹⁴ *The Reserve Banks and the Money Market*, 1927, p. 181.

¹⁵ Governor Harrison said: "I do not think it possible, through any action on the part of the Reserve system or any other central bank au-

trine, namely that it is the responsibility of the Reserve Banks to be guided in the extension of credit by the purpose for which it is proposed to use the funds, found expression as early as 1919. The following statement is quoted from the *Federal Reserve Bulletin* of July 1 of that year:

On June 10 the Board sent a letter to all Federal Reserve agents asking for information concerning the purposes for which funds obtained by rediscounting were being used by member banks. This letter was made public and one effect of it was apparently that of leading some banks to hesitate about making application for rediscounts where the funds were unquestionably intended for speculative purposes. . . . It is well to reiterate the fact that the funds of the Federal Reserve system are in no sense intended for the support of speculation and that member banks should bear this in mind when arranging for the extension of accommodation to borrowers.¹⁶

After the collapse of the stock market boom of 1919 the issue did not arise again until 1925, when, as has been noted, the "New York doctrine" was in the ascendancy. Mr. Miller, however, expressed the contrary view at that time:

. . . It [the Federal Reserve system] is a system of liquid productive credits. The use of Federal Reserve credit for speculation or investment purposes is precluded by specific provisions of the Federal Reserve Act. *It is clear, therefore, that no bank has a proper status as an applicant for Reserve Bank accommodation which is supplying credit for speculative uses.* It is the duty of the Federal Reserve Banks to hold true to the course plotted for

thority, to make money cheap for business and expensive for speculation." 71 Cong. 3 sess., *Operations of the National and Federal Reserve Banking Systems*, Hearings on S. res. 71 before Committee on Banking and Currency, Part 1, pp. 50-60; Part 6, pp. 721-22.

¹⁶ Pp. 617-18.

them in the fundamental provisions of the Federal Reserve Act. . . .¹⁷

The theory that the only feasible control of the Federal Reserve over the money market is through the volume of credit outstanding, and not through its allocation to particular uses, continued to be the official standard of Federal Reserve policy down to the end of 1927.¹⁸

During this period, however, there was growing pressure for a change of policy. There were strong arguments on both sides. On the one hand, the steadily rising tide of speculation and the unprecedented upward sweep of stock prices suggested that the Federal Reserve policy was unduly liberal. On the other hand, the wish to co-operate in the maintenance of the new gold standard currencies in Western Europe, the state of our gold reserves, the apparent absence of swollen inventories, and the considerable volume of unemployment, suggested a policy of easy money. Among critics of Reserve policy there was much difference of opinion as to the relative weight to be given to these factors, and no doubt there was likewise disagreement within Federal Reserve circles which was not made public.¹⁹

In 1928 Reserve policy was directed to controlling speculation by curtailing the total amount of Reserve

¹⁷ Quoted by George E. Roberts in *American Bankers Association Journal*, December 1925, p. 448.

¹⁸ The credit operations of the year 1927 need not be detailed as they have been described in Chaps. III and V. From June to September an extreme easy money policy was followed, and no positive restrictive action was undertaken until December.

¹⁹ Compare A. C. Miller's testimony at the Hearings on H.R. 11806, p. 117:

"The Chairman: You felt that the international situation should have more bearing than the effect of speculative activity?"

"Mr. Miller: I think that is what the Board felt; I felt the reverse."

credit in use. In January of that year the Reserve system abandoned the theory that the soundness of the credit situation can be gauged by statistical measures of production, employment, inventories, and prices, and recognized the stock market boom as the crucial element in the situation with which the Reserve system had to deal.²⁰ For a year and a half the market was subjected to strong pressure in an effort to curb the volume of speculation, or at least to curtail the contribution of Reserve credit to the supply available for its use.

In the first half of 1928 pressure was exerted in the traditional way, by open market sales and advancing rediscount rates. From December 31, 1927 to June 30, 1928 holdings of government securities were reduced from 617 million to 235 million dollars. Rediscount rates, which were $3\frac{1}{2}$ per cent at all Banks at the end of the year, had been advanced by March 1 to 4 per cent at all Banks, by June 7 to $4\frac{1}{2}$ per cent, and by August 1 to 5 per cent at eight Banks. It would be expected that under these conditions the flow of gold would be inward; as a matter of fact there was one of the most rapid outward movements which has occurred since the Reserve system was established.

The combination of an outflow of gold and a decrease in open market holdings made necessary a rapid increase in rediscounts; hence the efficacy of discount rates in curtailing the credit operations of the banks was tested under unusually favorable conditions. Open market money rates promptly showed the effect of the pres-

²⁰ It is to be noted that stock market conditions were not among the items enumerated in the annual report of 1923 as guides to credit policy, nor were they cited as an explanation of policy by either the Federal Reserve Board or the Federal Reserve Bank of New York in any later report up to 1928.

sure. Call loan rates advanced from an average of 4.24 per cent in January 1928 to 6.05 per cent in July, and other open market rates generally advanced during the same period by about 1 per cent. Meanwhile, the member banks reduced their reserve balances by about 100 million dollars (partly a seasonal decrease) and money in circulation fell by 38 million (also partly a seasonal change). Brokers' loans, however, continued to advance, a decrease of 521 million dollars loaned by banks (from January 4 to July 25) being more than offset by an increase of 926 million in the advances of non-banking lenders.²¹ Stock prices (as measured by the Standard Statistics index) remained about steady through the first three months of the year, advanced by fully 15 per cent during April and May, and then during June and July lost about half of the previous advance.

In short, there was no clear indication that the stiffening of money rates had yet had any dampening effect on the buoyancy of speculative sentiment. Nor was there any indication that the business community was being so handicapped as to make a reversal of the policy advisable. Business prosperity and speculation continued to advance together. Nevertheless, during the last half of the year the repressive policy was relaxed. The holdings of government securities were only slightly changed; rediscount rates remained unchanged at all Reserve Banks; but there was distinctly more than the usual seasonal increase in the holdings of acceptances.²²

²¹ *Annual Report of the Federal Reserve Board*, 1928, p. 129.

²² From July 31 to December 31 the increase in acceptances held was 327 million dollars. In no other years except 1924 and 1929 has the increase exceeded 235 million dollars, and usually it has been below 200 million (in 1924, 363 million dollars; in 1929, 329 million). Computed from data published in annual reports of the Federal Reserve Board.

At the same time the restrictive effect of the measures already taken was mitigated by a reversal of the gold flow. Between July and December the monetary gold stock increased by 23 million dollars. Rediscounts also continued to increase.

The result of the combination of gold inflow, increased rediscounts, increased acceptance buying, and stable holdings of government securities was to restore to member bank reserves about two-thirds of the funds which had been squeezed out in the first half of the year. The net decrease in member bank reserves for the year, therefore, was only 32 million dollars. This, of course, was a sharp change from the usual trend,²³ but no such drastic curtailment as had been foreshadowed in the first half of the year. Call rates continued to soar, averaging 8.6 per cent in December; other open market rates also advanced but not so rapidly as at first. The stock market continued its remarkable advance, the high call and time rates bringing forth an abundance of funds for brokers' loans, both from banking and from non-banking sources. For the year as a whole, brokers' loans of New York banks showed a decrease of 168 million dollars; for out-of-town banks there was an increase of 306 million; and for "others" an increase of 1,334 million.²⁴

In 1929 Reserve authorities abandoned the doctrine that control can be exercised only over the quantity of credit outstanding, and attempted qualitative control. It was clear by that time that the measures of restriction

²³ From the beginning of 1922 to the end of 1927 member bank reserve balances had shown an increase in every year, the average gain being 120 million dollars, or about 6 per cent.

²⁴ Monthly averages, December 1927 compared with December 1928.

undertaken in 1928 were not adequate to accomplish their purpose. There was tacit agreement on the necessity of a further attempt to restrict speculation, but there was very grave difference of opinion as to the means to be used. The directors of several Reserve Banks favored further effort along traditional lines; that is, putting rediscount rates still higher. The Board, or a majority of its members, believed that such action would be injurious to business and agriculture, and initiated an attempt to restrict the amount of credit available for the stock market without either a further contraction of the total amount issued or an increase in its cost to the business community. The holdings of government securities were sold down to about 100 million dollars, and the four Reserve Banks which still had $4\frac{1}{2}$ per cent rates were allowed to come up to 5 per cent, but all requests for permission to put rates above this level were denied. The New York Bank was particularly insistent in urging the need of a higher level, and a bitter quarrel developed on the subject between New York Bank and Reserve Board authorities. Advances to the 6 per cent level were also voted repeatedly in the spring by the directors of the Reserve Banks at Boston and Chicago;²⁵ these were in each case vetoed by the Board.

In place of credit restriction there was instituted in February a new device called "direct pressure." This policy consisted of a refusal of the rediscount privilege to those banks which maintained a volume of speculative security loans in excess of that deemed reasonable by the Reserve Banks.

In a circular dated February 7, 1929, the Board said:

The Federal Reserve Act does not, in the opinion of the Federal Reserve Board, contemplate the use of resources of the

²⁵ Hearings on S. res. 71, Part 6, pp. 753-63.

Federal Reserve Banks for the creation or extension of speculative credit. A member bank is not within its reasonable claims for rediscount facilities at its Federal Reserve Bank when it borrows either for the purpose of making speculative loans or for the purpose of maintaining speculative loans.

The Board has no disposition to assume authority to interfere with the loan practices of member banks so long as they do not involve the Federal Reserve Banks. It has, however, a grave responsibility whenever there is evidence that member banks are maintaining speculative security loans with the aid of Federal Reserve credit. When such is the case the Federal Reserve Bank becomes either a contributing or a sustaining factor in the current volume of speculative security credit. This is not in harmony with the intent of the Federal Reserve Act, nor is it conducive to the wholesome operation of the banking and credit system of the country.²⁶

It is impossible to state how far the Reserve Banks as a whole co-operated with this policy. Governor Harrison of the Reserve Bank of New York testified in 1931 that his Bank refrained from action on the recommendation, both because of lack of sympathy with the measure and also because the direct stock market loans made by New York banks in the spring and summer of 1929 were in fact comparatively few.²⁷

²⁶ *Federal Reserve Bulletin*, 1929, Vol. 15, p. 94.

²⁷ "The Chairman. . . . It is the business of the Federal Reserve Bank to know what the borrower is doing and for what purpose he is doing it. If that is not the meaning of this Act why should they feel—your board of directors ever feel, in any sense or degree—warranted in admonishing member banks in New York to reduce their loans to brokers?"

"Governor Harrison. Senator, we never did it . . . for two reasons: In the first place, the so-called brokers' loans of the New York banks were not going up. They were staying stable at the figure at which they rested even before the period of speculation began and, in the second place, our directors felt from the beginning the proper method of breaking such expansion, if it occurred, was through the rate rather than through a particular admonition to particular banks." (Hearings on S. res. 71, Part 1, pp. 55-56. See also Part 6, p. 725.)

It is to be noted, however, that there were newspaper reports in the

The Reserve Banks of Atlanta, Boston, Chicago, Dallas, Philadelphia, and St. Louis report favorably on the use of "moral suasion," several of them stating that they believe it to be more effective in keeping money out of speculative channels than is the discount rate. The management of the Cleveland Bank appears to agree with the New York position that the sphere of usefulness of moral suasion is in preventing member banks from borrowing too much or too continuously, rather than in controlling the specific use made of the funds that the banks command.²⁸

During the spring of 1929 business activity reached a considerably higher pitch²⁹ and the question began to be raised in numerous circles whether industry and trade, as well as speculation, might not benefit by some measure of restraint. Throughout the spring, as has been stated, there was a vigorous controversy between the Reserve Board and the Federal Reserve Bank of New York. The position of the Bank was that direct pressure was impracticable, and that rate increases were needed in order to deflate the stock market. Governor Harrison later stated the case thus:

The effective way to do it [to "put the brakes on"] is to put

early spring of 1929 to the effect that the Federal Reserve Bank of New York did discourage rediscounting by member banks which were lending freely on the call money market. The *New York Journal of Commerce* for Feb. 25, 1929 said: "A number of banks in this district have received a letter indicating that further rediscounting would not be permitted unless their brokers' loans were reduced. . . . Federal Reserve Banks in three western cities—Minneapolis, Kansas City and Dallas—have applied such a policy for a long time past. In the New York District, however, active adoption of a similar policy has only taken place since the warning was issued."

²⁸ Hearings on S. res. 71, Part 6, pp. 724-25.

²⁹ The production index of the Standard Trade and Securities Service for the first half of 1929 averaged 131 as compared with 120, 120, and 119 for 1926, 1927, and 1928 respectively.

a rate control into effect which will invariably result in a liquidation of those loans least desirable first; in other words, if you are a borrowing bank and we put the pressure of a 6 per cent rate on you, and you want to get out of our debt, you will not call the commercial customers' loans, but the least desirable loans or the most liquid loans or call loans, which are used as secondary reserves. When the rate pressure begins to work in New York, the first loans that begin to go are the call loans. Why? The banks trying to get out of debt will look at the collateral loans and will pick out the least desirable of the call loans and then, if the pressure is still too great, they will go up to the second level of call loans. That is where they adjust their position first.³⁰

Mr. Hamlin (a member of the Federal Reserve Board) gives the following interpretation of the reasons given by the New York Bank for its recommendation of higher rates:

... that speculation had injured business by increasing interest rates; that high interest rates prevented the flotation of foreign securities in the United States, that the purchasing power of Europe was thereby lowered, and that the high call loan rates were drawing gold from Europe.³¹

The Board's position, as explained later, was that the time had passed when it was possible to control the situation by moderate advances in discount rates; that the 6 per cent advance would have to be followed by a series of further advances,³² and that such advances would be a serious burden to other lines of business and

³⁰ Hearings on S. res. 71, Part 1, pp. 56-57. It should be added that Governor Harrison explained the failure of discount rate advances to check the speculative movement in 1928 as a result of the loans on account of "others."

³¹ *Ibid.*, p. 172.

³² "The Federal Reserve Board was asked to approve an increase to 6 per cent on the understanding that that was to be the first step, and then other increases were to follow, if necessary. As a matter of fact, rates as high as 7, 8, and 9 per cent were discussed at conferences in the Board as being possible under such a drastic increased rate policy." (Testimony of Mr. Hamlin, *ibid.*, p. 174).

would probably bring on a panic, whereas direct pressure would keep funds out of the stock market regardless of the willingness of speculators to pay rates which would be prohibitive for other types of business.³³

The Reserve Board was supported at first by the Federal Advisory Council, which had recommended in the previous autumn that the situation be handled by "co-operation" and which on February 15 adopted the following resolution:

The Council believes that every effort should be made to correct the present situation in the speculative markets before resorting to an advance in rates.³⁴

The resolution was not made public, however, until after the next meeting of the Council, that of April 15, at which time the Council decided that direct pressure had not been effective and recommended that Reserve Banks be allowed to raise their rates and "to maintain a rate consistent with the cost of commercial credit." This recommendation was renewed on May 21.³⁵

In the last week of March a combination of Reserve credit restrictions, seasonal expansion of commercial borrowing, the shifting of funds in connection with income tax payments, and preparation for April 1st dividends,

³³ "When a speculative mania is once under way you can not do anything with it by the use of higher discount rates; when speculation was beginning, higher rates might have been effective. But when you came to 1929, the period we were considering, it would have no effect whatsoever. The speculators, I believe, wanted us to approve the 6 per cent rate. Six per cent meant to those men easy money, because it meant, as they hoped, a discontinuance of direct pressure and permission to borrow all the money they wanted if they would merely put up good collateral and pay the increased discount rate. A 6 per cent rate would have been to the speculator a relief." (*Ibid.*, pp. 175-76.)

³⁴ *Annual Report of the Federal Reserve Board*, 1929, p. 218.

³⁵ *Ibid.*

resulted in a very tense money market situation in New York which threatened to bring about a stock market collapse and to precipitate a major crisis in the fight for control of the Reserve system.

The call rate jumped to 20 per cent on Monday, March 25, and stock prices broke.³⁶ There was much talk of an impending panic. In this emergency the National City Bank took the leadership by throwing 25 million dollars into the call money market (being at the same time a heavy borrower at the Federal Reserve Bank of New York). Other banks followed and after two days of 15 per cent call money the rate sagged back to 8 per cent and the stock market recovered by Thursday to 217. The incident, which was admittedly a direct violation of the principles laid down in the February warning of the Federal Reserve Board, derived particular interest from the fact that Mr. Charles E. Mitchell, president of the National City Bank, was a director of the Federal Reserve Bank of New York.³⁷ Mr. Mitchell was quoted in the newspapers of Wednesday as saying: "So far as this institution is concerned we feel that we have an obligation, which is paramount to any Federal Reserve warning, or anything else, to avert, so far as lies within our power, any dangerous crisis in

³⁶ The Standard Statistics Company daily index of industrial stock prices dropped from 214.6 on Saturday to 208 on Monday; on the 16th it had stood at 223.5.

³⁷ An interesting sidelight on the question was a debate between Senator Glass and former Senator Owen, the chief official authors of the Federal Reserve Act. Senator Glass declared that the Reserve Board ought to ask for Mitchell's resignation as a director of the Federal Reserve Bank of New York, while Mr. Owen took the position that speculation on the stock market is legitimate business and that the National City Bank had not only a legal right but a distinct obligation to see that the market was supplied with the funds necessary to prevent a collapse.

the money market."³⁸ It is noteworthy that the position taken by Mr. Mitchell is exactly that which was taken by the management of the System, apparently without dissent, at the time of the stock market collapse which ensued in the autumn of 1929.³⁹

The issue between the Board and the New York Reserve Bank came to a crisis in May 1929. On the first day of that month the Board addressed a letter to the Bank in which were listed certain New York member banks that were borrowing continuously or frequently and also were carrying a considerable volume of collateral loans, with a pointed request that the Reserve Bank deal with these banks in accordance with the policy laid down by the Board in its February "warning." After ten days the Bank replied with what appears to have been a flat refusal (the correspondence has not been published); stating that banks have a right to loan on collateral, that the Reserve Board has no way to determine whether collateral loans are in fact speculative, and that the right of a bank to borrow on eligible paper ought not to be prejudiced by the fact that it is exercising its legal lending powers. Three weeks later (perhaps even before June 1) the policy of direct pressure was abandoned.⁴⁰

On August 8, the rediscount rate at New York was at last raised to 6 per cent. This, however, was not at all a measure of restraint. For simultaneously the buy-

³⁸ It may be added that Mr. Mitchell defended his position entirely on the basis of the emergency situation and did not express a general dissent with the theory underlying the Reserve Board's warning. In the National City Bank Letter for August 1928 it was stated that "if funds borrowed upon eligible collateral are diverted to the security markets, the law is violated in the spirit if not in the letter."

³⁹ Compare p. 54.

⁴⁰ Hearings on S. res. 71, Part 1, pp. 169-71.

ing rate on acceptances was lowered from $5\frac{1}{4}$ to $5\frac{1}{8}$ per cent. As the supply of acceptances always increases greatly with the oncoming of the harvest season, the effect of putting the discount rate above the acceptance buying rate was merely to bring about a shift from re-discounting to the sale of acceptances. The important thing about this action was that after keeping its credit substantially out of the acceptance market for a number of months, the Reserve Banks once more gave to that market the full measure of their support. As was anticipated, acceptance holdings jumped up (from 74 million at the end of July to 176 million at the end of August, and to 292 million at the end of September), while re-discounts fell off by only about half as much. Market rates of interest showed little change until later in the fall, after the stock market decline was under way, but funds were available in plenty at rates around 8 and 9 per cent for borrowers who had stock market collateral.⁴¹

Direct pressure achieved no greater success as a stock market sedative than did rate pressure. The price averages remained fairly stable throughout the first half of the year 1929, though the stability was due to the more or less accidental compensation of big advances in certain groups of stocks and big declines in others. In the third quarter there was a final tremendous upward movement, followed by the memorable collapse of October and November.

In this crisis there was no thought of discrimination

⁴¹ The low point of call rates in every month of 1929, through September, was 6 per cent; in October, 5; in November and December, $4\frac{1}{2}$. The high point was 20 in March, 16 in April, 15 in May and July, 12 in August, 10 in June, September, and October, and 6 in November and December.

in credit policy against the stock market. On the contrary, the Federal Reserve Banks came to the aid of the member banks with heavy purchases of government securities, and the funds thus released were poured by the banks into the stock market, largely through security affiliates.⁴²

In the spring of 1930 it appeared that the tests set up in 1928-29 had been abandoned. Stock prices far higher than those of early 1928 caused no alarm. Nothing was heard of the increase in the proportion of security loans and investments to total loans and investments. No alarm was expressed because brokers' loans were heavier than they ever had been before 1929. No complaint was uttered because Federal Reserve credit was used to support stock market speculation. The peak of 1929 had been so high that it dwarfed all lesser peaks, and the fear of depression outweighed all anxiety lest the stock market absorb too much credit.

Since the second collapse of stock prices, in the late spring of 1930, down to May 1932, the issue of damping down a stock market advance has not arisen. There have been no advances of such violence as to create anxiety.

Federal Reserve policy was successful in keeping down the direct use of Reserve Bank credit in the stock market, but not in stabilizing the stock market itself. One's judgment of the success of the Federal Reserve policy of 1929 depends on one's conclusion as to what objectives were deemed most important. If the main purpose was to check the growth of speculative activity,⁴³ both the experiment of direct action and the use

⁴² For data concerning these operations see below, pp. 158-60.

⁴³ This seems to be implied in the passage quoted below (p. 149) from the Report of the Secretary of the Treasury.

of credit restriction must be acknowledged failures. The market was able to go ahead because it was able to finance itself—by imports of gold and by borrowing from “others”—with a diminishing supply of Federal Reserve credit, and to pay rates which no Reserve organization would have dared to impose upon commercial borrowers. I see no reason to doubt that the course of the market would have been much the same if the Reserve system had increased rediscount rates even more sharply, or had restricted call lending by banks more successfully. Nor was the final stock market liquidation forced by the credit situation. The basic fact was the rise of a general conviction that it was time to “get out from under.” Speculation is based in part on faith in ultimate values, but also in large part on the hope of more speculation. No credit policy is adequate to stem the flood of liquidation when, after a stock market advance, the conviction takes hold of the public that there is no prospect of a further advance. There is no real reason to believe that Reserve Bank policy played a significant part in bringing about the decline.

If, however, we limit the responsibility of the Reserve system to keeping down the amount of Reserve credit used directly in the stock market, we must concede that it achieved a considerable degree of success. Though Reserve credit increased in 1928, the expansion was not enough to offset the outflow of gold so that the volume of member bank reserve deposits actually declined. During the first nine months of 1929 they still showed no increase, though the System recovered all the gold that had been lost in 1928. There was a small increase in member bank loans and investments in the latter year, but this was much more than covered by the increase of capital and surplus and was represented

entirely by loans not secured by stocks and bonds. The Reserve system can, therefore, be acquitted of any responsibility for financing the last year and a half of the stock market boom.

In 1929, before the Reserve system relaxed its policy of withdrawing Federal Reserve credit from banks which were making stock exchange loans, the situation of the banks which were financing the security markets was not essentially different from what it would have been had there been no Federal Reserve system. Without a Reserve system, the market, after taking up the slack in American banks' reserves, would have had two resources to fall back on—namely, foreign credits and the credit of domestic lenders. Foreign credit could have been obtained through gold imports arising either from bank operations, or through foreign participation in loans by "others." Domestic loans by "others" would not have created new reserves but would have eased the pressure on the banks by leading to a cancellation of deposits.

These sources of aid were exactly as accessible with the Federal Reserve system in operation—regardless of whether its policy was to encourage or to discourage stock market activity—as they would have been otherwise. The creation of the Federal Reserve system had merely added another potential resource, the credit of the Reserve Banks. To the extent that this new resource was now cut off by "direct pressure," the market was thrown back on its old resources, non-banking credit and bank credit supported by newly imported gold.

In so far as the idea was merely to insure that there should be a reservoir of Federal Reserve credit available for rescue purposes whenever the boom might col-

lapse, complete success was attained.⁴⁴ As has been noted elsewhere, the stock market crash of 1929 was differentiated very sharply from previous stock market collapses by the fact that in 1929 the last line of defense had been reached. Bank credit was available in abundance and there was no forced selling except on account of the exhaustion of margins. This fact must be placed to the credit of the Reserve system. Under the old form of organization of American credit the banks could have supported the market only to the extent that they could have replenished their reserves by imports of gold. There was no reserve supply of unused lending capacity, and the banks which made up the system were too numerous to make it possible to maintain such a reserve by mutual agreement. One of the most important things for which a Reserve system is needed is to pool the resources of the banks in such a way that a margin of lending capacity is held in reserve, with the cost automatically distributed over the whole System. And this is just what the System did in this case. Had this resource not been in existence the crisis would have been serious indeed, for no such abundant resources of foreign gold were available as existed in 1907 and 1920.

It must be admitted, however, that under the conditions of 1928-29 this was not an extraordinary achievement. The surplus reserves in the Reserve Banks were so large when the boom started in 1924 that even if the Reserve Banks had pursued a flagrantly shortsighted expansionist policy, there was not the slightest

⁴⁴ "... the course adopted by the Board resulted in a substantial conservation of the credit resources of the banking system of the country, and particularly of the Federal Reserve Banks, for essential needs which arose later in the year." (*Annual Report of the Federal Reserve Board*, 1929, p. 4.)

danger that a stock market boom would run so far as to exhaust the Reserve Banks' lending power before toppling of its own weight, unless there occurred also a boom in commodity markets. The fact that the Reserve Banks were in a position to bring aid to the market in November 1929 was the result of the policies adopted in 1923 in the face of the great gold imports, rather than of those adopted for the first time in 1928 and 1929 to deal with the stock market.

According to the Board's spokesmen, however, the solicitude of the System to keep credit out of the stock market was not based merely on a desire to keep the Reserve Banks free to come to the rescue when the inevitable crash came (inevitable at least in retrospect), but on a purpose to keep the stock market from absorbing more than "its share" of the credit in the common reservoir, to the detriment of business and agriculture. From this standpoint, the policy of the Reserve system must be adjudged a failure. The discount rate and open market policies of 1928 and the "direct pressure" of 1929 may perhaps have kept down the amount of Reserve credit which went into use through the stock market, but if so it was because they kept down the total amount available for all uses, and not because agriculture and business gained at the expense of the stock market.

Assuming for the moment that there was real danger that the stock market would absorb so much credit⁴⁵ as to work a hardship on agriculture and business, there were two possible ways of guarding against it. One was the traditional method: make credit so expensive for

⁴⁵ Compare pp. 132-33. We consider in Chap. VIII the extent to which such absorption is possible.

all comers as to bring about a stock market liquidation even at the risk of bringing on a commercial liquidation; then make it cheap again in the hope that agriculture and business will revive and expand their use of credit before a stock market revival runs far enough to create fresh pressure on the banks. The other alternative, which was an innovation, was to try to shut credit out of the stock market by direct action while keeping it available and not prohibitively dear for other lines of business. In 1928 the first alternative was adopted; in 1929 the second.

Unfortunately, neither experiment was carried out with such thoroughness as to settle the question of its usefulness. Rate control was abandoned with rates at 5 per cent; possibly 6 per cent or 7 per cent rates supported by a refusal to buy acceptances or government securities might have been more successful, though it does not appear likely. On the other hand, if dependence was to be placed on direct action and money kept cheap for business, rediscount privileges should have been freely extended at low rates to banks which kept out of the stock market lending business. This policy, coupled with open market sales to mop up the floating supply of Reserve Bank credit would, if the theory of direct action was correct, have kept money cheap for industry and agriculture and at the same time have conserved the resources of the System for their use. Instead, all rediscounting was penalized with a 5 per cent rate, and acceptance rates—contrary to all precedent—were kept above rediscount rates. Commercial paper rates were actually forced up by nearly 2 per cent. All this was at a time when the Reserve Banks had abundant reserves, when no evidence of business inflation had been de-

tected,⁴⁶ when undesired gold was flowing in, and when the stock market was not getting its funds from banks.

Nevertheless, the experience of 1929 does not support the position of those who deny the possibility of discriminating in the allocation of credit. The attempt to give "commercial" demands priority over "speculation" was partially successful. Though open market rates for commercial paper advanced, rates on collateral loans advanced much more. Though the banks have usually given a preference to commercial loans, in 1928-29 there was probably more discrimination than there would have been in the absence of the special propaganda directed to that end.⁴⁷ Credit was not kept in water-tight compartments but the flow to the stock market was to a certain extent obstructed.

So far in our discussion we have not considered the validity of the objectives at which the Reserve system was aiming in 1928 and 1929. Indeed, in all this controversy the one thing on which all parties were able to agree was the desirability of checking the stock market boom. Because spokesmen for the Federal Reserve Board, representatives of the Reserve Banks, and Congressional investigating committees were unanimous in regard to this aspect of policy, the reasons for its acceptance have received but little attention. Interest has centered almost exclusively in the technique of control.

⁴⁶ "Distribution of commodities to consumers kept pace with production and there was no evidence of a general accumulation of stocks at distributing points or of inventories at factories or commercial establishments." *Federal Reserve Bulletin*, January 1929, p. 1.

⁴⁷ At the peak of money rates in September 1929, the yield of 90-day time loans on stock market collateral averaged in New York 2.81 per cent higher than prime commercial paper; at the peak in August 1920 the difference was 0.72 per cent. (Averages computed by the Standard Statistics Company from rates quoted weekly in the *Commercial and Financial Chronicle*.)

Yet the really important thing about the whole episode, and the thing which differentiates it from almost all recorded central banking history at home and abroad,⁴⁸ is not the methods used but the objects aimed at. In Chapter VIII, therefore, we shall consider the principal reasons which have been offered in justification of the attack on speculation, and try to arrive at a judgment as to their soundness.

⁴⁸ The attack on the Bourse by the Reichsbank in May 1927 presents a parallel case, though the technique employed was entirely different.

CHAPTER VIII

THE RESERVE BOARD AND THE STOCK MARKET: THE OBJECTIVES OF CONTROL

In order to appraise the policies of credit restriction and credit allocation pursued by the Federal Reserve system during 1928 and 1929, it is necessary to examine with care both the utterances of Reserve officials and the actual performance of the Reserve Banks. Were the successive measures of credit restriction adopted in the interest of business stability, as this objective was stated in 1923-26; were they based on fears as to the safety of the outstanding loans of the banks; did they reflect merely a desire to protect the reserves of the Reserve Banks themselves; or was there an effort to protect the public from the direct losses which might one day result from a downward revaluation of popular securities?

Let us survey first the Federal Reserve Board's own explanations of its policy. The annual report for 1928, though it devoted considerable space to credit policy, did not explain at all fully the reasons underlying the policies which had been adopted. The first relevant statement which we find is this: "Toward the end of the year [1927], however, *in view of the rapid increase in the demand for credit from the security markets*, these purchases [that is, of government securities] were reduced in volume and finally discontinued. . . . Early in 1928, when it began to be apparent that industry in this country was again active and that the emergency abroad had passed, the Federal Reserve system determined to exert its influence more actively toward firmer money condi-

tions." (Pages 3-4.) The report further points out (pages 7-8) that increased loans and investments of member banks, regardless of their purpose, result in the creation of additional deposits which in turn increase the demand for Reserve Bank credit. Therefore "excessive or too rapid growth in any field of credit" is a matter of concern to the Federal Reserve system. It is then shown in detail that in recent years the most rapid expansion of bank credit has taken the form of investments and loans on securities. "The proportion of bank credit that is based on securities has been rapidly increasing."¹

The annual report of the Secretary of the Treasury, which was released early in 1929, explained the restrictive credit policy as an attempt to curb speculation, but did not explain why such curbing was considered to be a duty of the Reserve Banks. This report said:

As it became apparent, first, that the objects of the policy originally adopted were being accomplished, and, second, that speculation was growing, the policy [that is the easy money policy of the summer and early fall of 1927] was reversed. . . . However, the action taken early in the year unquestionably was not effective with reference to speculation, partly due to the activities of powerful groups of speculators, and partly due to the fact that the public in general believed and acted as if the price of securities would indefinitely advance.²

A public statement issued on February 7, 1929, relative to "direct pressure,"³ developed the Board's position more fully, as follows:

During the last year or more, however, the functioning of the Federal Reserve system has encountered interference by

¹ Compare above, pp. 269-71.

² *Annual Report of the Secretary of the Treasury on the State of the Finances for the Fiscal Year Ended June 30, 1928*, p. 5.

³ Reprinted in *Annual Report of the Federal Reserve Board*, 1929, pp. 2-3.

reason of the excessive amount of the country's credit absorbed in speculative security loans. The credit situation since the opening of the new year indicates that some of the factors which occasioned untoward developments during the year 1928 are still at work. The volume of speculative credit is still growing.

Coming at a time when the country has lost some \$500,000,000 of gold, the effect of the great and growing volume of speculative credit has already produced some strain which has reflected itself in advances of from 1 to 1½ per cent in the cost of credit for commercial uses. The matter is one that concerns every section of the country and every business interest, as an aggravation of these conditions may be expected to have detrimental effects on business and may impair its future.

The Federal Reserve Board neither assumes the right nor has it any disposition to set itself up as an arbiter of security speculation or values. It is, however, its business to see to it that the Federal Reserve Banks function as effectively as conditions will permit. When it finds that conditions are arising which obstruct Federal Reserve Banks in the effective discharge of their function of so managing the credit facilities of the Federal Reserve system as to accommodate commerce and business, it is its duty to inquire into them and to take such measures as may be deemed suitable and effective in the circumstances to correct them; which, in the immediate situation, means to restrain the use, either directly or indirectly, of Federal Reserve credit facilities in aid of the growth of speculative credit.

Finally the annual report for 1929 amplified previous explanations in the following terms:

The year 1929 opened with total Reserve Bank credit outstanding in larger volume than in any year since the post-war crisis. Security loans of member banks and brokers' loans had attained new peaks. Collateral indications derived principally from the intense activity of the securities markets and the unprecedented rise of security prices gave unmistakable evidence of an absorption of the country's credit in speculative security

operations to an alarming extent. There was nothing in the position of commercial credit or of business to occasion concern. The dangerous element in the credit situation was the continued and rapid growth of the volume of speculative security credit.

The measures taken by the Federal Reserve Banks in the year 1928 to firm-money conditions . . . had not proved adequate. The second half of the year 1928 witnessed an aggravation of the conditions that had called forth the firm-money policy of the Federal Reserve Banks in the first half of the year.

The credit situation confronting the Federal Reserve system at the opening of the year 1929, therefore, still stood in need of correction.⁴

The explanation of the policy followed in 1929 brings out a further item in the System's set of standards to which reference had never been made before. The report stated:

. . . Loans to brokers by non-banking lenders, although they do not directly involve member banks, have nevertheless an effect on the banking situation, both because the banks are aware of the necessity of taking over such loans in case an emergency develops and because their existence and employment results in a much more active use of bank deposits.⁵

We may now summarize the standards which were stated to have determined the policy of the Reserve Board in 1928 and 1929:

1. The Board definitely abandoned the idea that the responsibility of the Reserve system's management is solely for the amount of credit outstanding, not for the use made of it by member banks. Several Reserve Banks, including New York, clung to the earlier doctrine.

2. It was decided, or assumed, that the effect of stock

⁴ *Ibid.*, pp. 1-2.

⁵ *Ibid.*, p. 7.

market lending is to curtail the credit available for other purposes. There is not even a reference in Reserve system literature to the doctrine held by prominent European students that the stock market is only a channel through which credit flows without seepage to its industrial or commercial use.⁶

3. In 1928 the principle was laid down for the first time since the era of war-time controls that it is the business of Reserve management to see to it that no line of activity gets more than its share of the credit resources of the Reserve system. No general test for the determination of the fair share of any interest was set up, but it was clearly implied that any sharp change in the proportions going to different uses is presumptive evidence that some interest is getting more than its share. It was stated, indeed, that stock speculation was not entitled to any share, but no real effort was made to keep all Reserve credit from speculative uses. Such an attempt would have meant cutting the stock market off from all member bank credit, since all member bank credit rests on Reserve credit.⁷

4. In 1929 the principle that the stock market should not have access to Reserve Bank credit, or to more than its share of it, was broadened so as to apply to its use of credit obtained from other than banking sources. The situation was deemed not to have been corrected early in 1929, though member bank security credit was not expanding, because the stock market was now getting credit from other lenders.

5. As a practical matter, though not in theory, the Board assumed responsibility for the volume of stock

⁶ See below, pp. 161-73.

⁷ Compare pp. 28-30.

trading and the level of stock prices. In the statement of February 7, 1929 it was said that: "The Federal Reserve Board neither assumes the right nor has it any disposition to set itself up as an arbiter of security speculation or values." Similar statements were frequently made by Reserve officials.⁸ But the course actually followed by the Board and the Reserve Banks in 1928 and 1929 differs only in name from an attempt to set the System up as an arbiter of security values. It makes little difference whether the objective is to correct stock market values and reduce stock market activity or only to correct credit conditions, if stock market values and stock market activity are made the chief test as to whether credit conditions are in need of correction. And this seems to be a fair statement of what was actually done. Not only does the Board cite "collateral indications derived principally from the intense activity of the securities markets and the unprecedented rise of security prices" as evidence of absorption of the country's credit by the stock market, but it admits that at the end of 1928 there was "nothing in the position of commercial credit or of business to occasion concern."

The money market did not show evidence that speculation was absorbing credit which was needed elsewhere. The only evidence ever cited by the Reserve system in support of its conclusion that security speculation was absorbing an undue proportion of the country's credit, aside from the fact that the volume of security loans

⁸ For example, Governor Young said, in September 1928: "Many people in America seem to be more concerned about the present situation than the Federal Reserve system is. If unsound credit practices have developed, these practices will in time correct themselves, and if some of the over-indulgent get 'burnt' during the period of correction, they will have to shoulder the blame themselves and not attempt to shift it to someone else." (*Trust Companies*, Vol. 47, p. 282.)

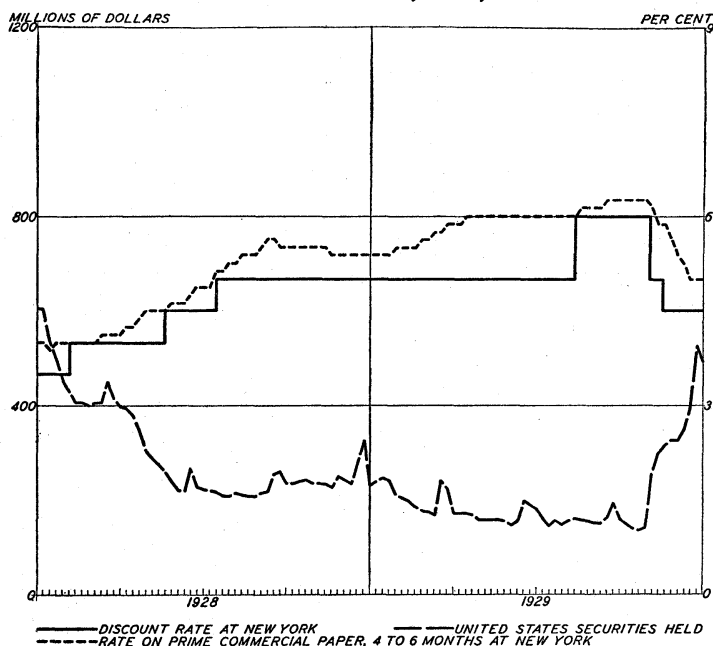
and of brokers' loans, the prices of stocks, and the turnover of stocks were breaking previous records, was found in the movement of interest rates. The statement of February 7 sets forth the view that "the effect of the great and growing volume of speculative credit has already produced some strain which has reflected itself in advances of from 1 to 1½ per cent in the cost of credit for commercial uses." This was a most surprising statement, since Federal Reserve policy had been vigorously directed for more than a year to the end of bringing about just such a rise in money rates. Since the System's portfolio had been "practically exhausted by the sales made in the first half of 1928,"⁹ discount rates had been raised to 5 per cent at eight Banks, and strong "moral suasion" had been exerted against continuous borrowing, it would have been strange if open market interest rates had not advanced, regardless of whether the stock market got more or less than its share of credit.

The sequence of changes in Reserve policy and changes in money rates in the open market, shown in the chart on page 155, supports the conclusion that the tightness of the money market in 1928 and 1929 was due to Federal Reserve system policy rather than to stock market activity. In 1926, after years of stock market activity, money was not dear. It became cheap in response to Reserve system policy in 1927, and became progressively dearer as the Reserve system's policy became more restrictive in 1928 and 1929. Every Reserve

⁹ *Annual Report of the Federal Reserve Board*, 1929, p. 2. The statement is not quite accurate, as the total holdings at the end of 1928 were \$228,000,000. Indeed the same report states, on page 4, that after the first three weeks in January the growth of discounts "was further accelerated by sales of United States securities out of the System's portfolio."

Bank advanced its discount rate to 4 per cent in late January or in February 1928, and to $4\frac{1}{2}$ per cent in April or May; in June and July the rate at eight Banks went to 5 per cent.

DISCOUNT RATE AT NEW YORK, SECURITY HOLDINGS
OF RESERVE BANKS, AND COMMERCIAL
PAPER RATE, 1928-29



Reserve Bank holdings of United States government securities fell steadily and rapidly from 606 million dollars in December 1927 to 213 million dollars in July 1928. At first this decrease was merely the liquidation of abnormally large holdings accumulated late in 1927, but from May for more than a year the portfolio was

considerably smaller than it had been since the early spring of 1924. Open market interest rates responded promptly to this change of policy. In January and February 1928 commercial paper rates ranged slightly below those charged a year before;¹⁰ in March they were at about the same level as in 1927; in April and May they were a shade higher; and from June on they were higher than they had been at the corresponding season since 1920. Other open market rates showed a similar tendency. Call loan rates advanced steadily, and from May on averaged higher than at any time since 1921. Time collateral loans showed the same trend. Rates charged over the counter in New York responded more slowly, but from June on were definitely above those of recent preceding years. There is an obvious parallelism between the advance of Federal Reserve discount rates and the reduction of holdings of securities on the one hand, and the advance of market rates of interest on the other hand.

In 1929 Reserve system policy became still more restrictive; the policy of eliminating open market holdings was extended to acceptances as well as government securities; rates were advanced to 6 per cent in those Banks which had a lower rate, and rediscounts were refused to banks which would not co-operate in the policy of starving the stock market. In spite of gold imports member bank reserves showed an actual decline. Money rates responded by a further very sharp advance.

The Reserve Board's treatment of brokers' loans on account of other than bank lenders did not reflect a whole-hearted desire to conserve credit for commerce

¹⁰ The 1927 rates were a little below those of 1926, and about the same as the 1925 rates.

and industry. So far as the purpose was to conserve credit for the need of trade and not to correct security values, an increase in the non-banking loans should have been greeted with hallelujahs. For whenever a broker borrowed from an individual or corporation in order to pay off a loan at a bank, total deposits were reduced, and the necessary volume of bank reserves was therefore also reduced.¹¹ Reserve credit was thus freed to support other credits for industry and agriculture, if there was a demand for them. And if the total volume of brokers' loans increased because a broker borrowed from a corporation or individual, not in order to pay off a bank loan but to increase the total amount of funds at his disposal, there was no increase of bank deposits or decrease of reserves; hence there was no impairment of the lending power of the banks.

Nevertheless the attitude of our Reserve system toward this new credit system was one of suspicion and hostility. After the drastic liquidation of October and November 1929 the Board said:

Although there has been an increase in the volume of bank credit, as the banks have taken over loans of non-banking lenders, the total volume of funds used in the money market had decreased by a large amount and the general credit situation had been improved by the liquidation of these loans.¹²

The annual report for 1929 (page 7) gives two reasons for the Board's interest in loans by "others"; first that loans to brokers have an effect on the banking situation because the banks are aware of the necessity of taking over such loans in case an emergency develops, and

¹¹ The deposit of the lending corporation was reduced, and there was no corresponding increase in deposits elsewhere.

¹² *Federal Reserve Bulletin*, December 1929, Vol. 15, p. 756.

second that the existence of such loans results in a much more active use of bank deposits.¹³ Of these points the second was not at this time developed fully enough to be clear. More active use of bank deposits was certainly not in itself an evil to be corrected nor was it shown that it carried with it any undesirable consequences.¹⁴ The first point, namely that loans by non-banking lenders constitute a virtual contingent liability to the banking system because "the banks are aware of the necessity of taking over such loans in case an emergency develops," is worthy of consideration. It is a new doctrine, the traditional banking theory being to the effect that when there is a conflict between commercial demand and stock market demand the stock market always has to give way. Undoubtedly, there is some force in the new view. The banks, including the Reserve Banks, did feel a certain responsibility to support the market when necessary by taking over these loans (though the commercial banks did not keep any unused margin of reserves for this purpose).

When the stock market collapse came it was in fact accompanied by a very large shifting of loans from "others" to banks. Loans on securities by reporting member banks jumped from 7,632 million dollars in the first week of September 1929 to 8,746 million in the first week of November, and brokers' loans by domestic banks rose in one week from 1,077 million to 2,069 million. Offsetting this latter expansion there was a shrinkage of 1,400 million dollars in loans "on account of others."

This shifting process, however, did not involve a tightening of the market and did not result in compul-

sory liquidation. The New York banks had already pegged the call loan market at 6 per cent and this rate was not advanced. Moreover, and more important, credit was available for everyone who had collateral. In previous panics margin speculators had been sold out because loans could not be obtained to carry them; in this panic many were sold out because margins were exhausted by the decline in the value of their collateral, but those who were able to keep their margins good were able to get credit throughout the panic period at rates much lower than had been quoted a few months before, while the market was booming.

How were the banks able to take over the load of loans on account of "others" without a credit strain? Partly by the support of the Reserve system. As has just been indicated, the Reserve Banks made very large open market purchases. From September 30 to October 31 the reserves of the member banks were increased in this way by 340 million dollars, or 14 per cent, which is several times as rapid an increase as had ever been recorded previously. When the non-banking lenders called in their enormous loans to brokers, they did not hide the proceeds away in cash in the corporate equivalent of a chimney corner. They did one of two things: they bought securities or they deposited the funds in banks. In the first case the need for brokers' loans disappeared along with the loans themselves; in the second case the banks were put in possession of funds to lend to brokers and other security holders, but additional reserves were needed to support the additional deposits. The relative extent of the two processes is indicated approximately by the following figures: From October 2 to October 30 reported brokers' loans on account of

non-banking lenders shrunk by 1,443 million dollars; while brokers' loans on account of banks expanded by only 177 million. Total security loans of reporting member banks expanded by 1½ million dollars, while total deposits of reporting member banks expanded in the same period by 1,858 million.¹⁵ To support this increased volume of deposits it was necessary merely to release again the Federal Reserve credit the impounding of which led to the original creation of the loans on account of "others." Federal Reserve credit expanded between September 30 and October 31 by 272 million dollars, considerably less than the amount by which it had been contracted in the single month of January 1928.

To what extent the outside lenders withdrew in panic and threw the burden on the banks, to what extent the shrinkage was due to withdrawal of loans by investors who wished to take advantage of the lower level of stock prices to make purchases, how far it was due to lowering of call loan rates, and to what extent it was merely a nominal change arising out of relations between banks and affiliated companies it is impossible to state. But it is certain the outside lenders did not withdraw their money from the market until concerted action by the New York banks lowered the rates below those which had originally attracted the outside lenders into the market. This fact makes it impossible to appraise the claim that loans "on account of others" present a dangerous element of instability. There is no doubt that the private lenders are

¹⁵ Data are available only for reporting member banks. These banks at the end of 1929 held 65 per cent of the deposits of all member banks, or less than 40 per cent of the deposits of all the banks of the country. It is probable that the deposits created by the calling of brokers' loans by non-banking lenders accrued chiefly to these reporting banks, however. Their increase of reserves from October 2 to October 20 accounted for over 75 per cent of the increase of the reserves of all member banks.

easily driven out by falling interest rates, but falling rates are themselves an evidence of the ability and willingness of the banks to take over the load. They are not the evidence of an emergency. It is impossible, therefore, to base a valid conclusion on this experience as to how outside lenders would behave in an emergency great enough to justify the payment of emergency rates. Undoubtedly the supply of non-banking credit is elastic; that it is undependable has not yet been demonstrated.

We turn now to an appraisal of the objectives of Reserve system policy which, as we have noted, were common to both parties to the internal controversy. Did the Reserve system for these two years operate on a sound theory of the proper aims of central bank policy? We shall consider first the purpose which has been emphasized throughout the period; the safeguarding of the credit resources of the country against absorption by the speculative markets.

The theory that stock market speculation tends to curtail credit for other purposes has given rise to much controversy. With reference to the effect of stock market loans on the ability of the banks to make loans for other purposes, there is a wide divergence of opinion among students of economics. At the one extreme stand a group of bankers and scholars, mainly European, who contend that stock market loans absorb no capital whatever; at the other extreme are those who contend that the extension of a loan by a bank to a broker means a corresponding curtailment of the ability of the banking system to meet the needs of the commercial and industrial community.¹⁶

¹⁶ The most complete theoretical discussions of the absorption of credit by the stock exchange are F. Machlup, *Börsencredit Industrie-credit und Kapitalbildung* (Vienna 1931), and Harold L. Reed,

The first position was stated clearly by Professor Cassel at the hearings on the Strong bill and has been developed by him more fully in numerous writings. He has stated the doctrine as follows:

. . . we shall repeatedly come across statements to the effect that the loans to the New York Stock Exchange have withdrawn money from productive uses. We find bitter complaints that industry and agriculture have thus been deprived of working capital. It has also been contended that the large demands of the Stock Exchange have forced up the rates of interest on capital for productive purposes. And hopes have been expressed that it will eventually be possible, by restricting credits to the Stock Exchange, to cause speculation to collapse and thus release capital for productive uses.

This whole view is in reality devoid of any foundation. If the New York member banks increased their loans to the Stock Exchange, in round figures, from three milliard dollars in July 1927 to four and a half milliard dollars in June 1928, this by no means signifies that the enormous sum of one and a half milliard dollars has been withdrawn from industry and commerce. Viewed in the rough, what has happened is merely this, that speculators have borrowed one and a half milliard dollars in order to buy securities on the New York Stock Exchange, but that exactly the same sum has gone to the sellers of those securities, and has thus been placed at the disposal of the real capital market.¹⁷

And again as follows:

To begin with, it should be possible for all of us to agree on the following simple propositions:

1. If a *new buyer* of shares has appeared and has bought part of the stock of shares without any rise in price, and if he has paid for the shares solely out of his own resources, the

Federal Reserve Policy 1921-1929 (1930). The statistical material of most importance is in James H. Rogers, *Stock Speculation and the Money Market* (1927). For other references see Appendix B.

¹⁷ *Skandinaviska Kreditaktiebolaget Quarterly Report*, October 1928, p. 58.

Stock Exchange will not have absorbed any capital from outside, and the supply of capital in the country will remain as before. The buyer has indeed withdrawn capital from other uses, but the same amount of capital will have gone to the seller, who will invest it in industry or commerce, or, at all events, outside the Stock Exchange. If this transaction is repeated any number of times during the year, the result is bound to be the same. Thus it will make no difference whether in the course of the year any seller has appeared also as a buyer.

2. If a new buyer of shares has *borrowed* part of the necessary capital, this will not materially alter the position. The only difference is that the capital has been supplied by a larger group of persons; but the entire capital will have gone to the sellers, who will return it to industry and trade.

3. If the aggregate *price* of the shares has *risen* by a hundred millions, but if no shares have changed hands, the holders of the shares will not have withdrawn any capital from industry and commerce. True they now possess a larger capital than before, but this accretion of capital has been obtained in virtue of the rise in the value of the shares. Or, to invert the proposition: A larger amount of capital is indeed now required in order to hold the entire stock of shares, but the additional capital needed has been obtained by the holders through the actual rise in the price of the shares, and thus no capital has had to be withdrawn from other sources.

It has thus been established that no drain on capital is involved by the appearance of new shareholders, nor by the borrowing of money for the purchase of shares, nor by a rise in the price of shares. But, if none of these three factors entails the withdrawal of capital from industry and commerce for investment in shares, it follows that no combination of these factors can have that effect. Thus, if at the end of the year the entire stock of shares had passed into the hands of new holders, and if, in order to acquire it, they have borrowed a certain amount of capital, so that they are in debt to that extent, and if moreover the value of the stock of shares is greater by a hundred millions than at the beginning of the year, all these changes taken together cannot have entailed the withdrawal of any capital from industry and commerce. Thus the amount of

capital available for industry and trade will at the end of the year be precisely the same as though these changes had not taken place.¹⁸

At the other extreme stands the view of Dr. B. M. Anderson who says, in connection with the passage from Professor Cassel's writings first quoted above:

This argument is shot through with fallacies. An increase in commercial bank loans, of whatever kind, whether stock market loans, commercial loans, real estate mortgage loans, or loans of any other kind, tends to reduce the ability of the banks to make other loans, and tends to raise rates of interest to other borrowers. The point is that when a bank makes a loan, it must either pay out cash from its reserves, reducing its ratio of reserves to deposits, or else increase its deposits, which again reduces the ratio of reserves to deposits, though at a less rapid rate. With declining reserve ratios, interest rates rise. Stock market loans have precisely the same effect here that any other loans have. Interest rates in the United States today would undoubtedly be a great deal lower for all purposes than they now are if four or five billion dollars of deposits were cancelled in the process of liquidating four or five billion dollars of bank loans against securities.¹⁹

There are several distinct factors involved in a stock market boom, and the apparent conflict between Cassel and Anderson reflects chiefly a concentration of interest on different factors, rather than a difference of opinion as to what actually takes place. Professor Cassel's argument is correct, in so far as it relates to the increasing turnover of old shares and the changes in the prices at which transfers take place. These changes do not of themselves withdraw any funds from industry. Nor is

¹⁸ *Ibid.*, April 1929, pp. 21-22. Compare also Professor Cassel's testimony on the Strong bill (70 Cong. 1 sess., *Stabilization*, Hearings on H.R. 11806 before Committee on Banking and Currency, pp. 381-82; A. Hahn, *Geld und Kredit*, pp. 187-88).

¹⁹ *The Chase Economic Bulletin*, May 8, 1929, Vol. IX, No. 3, p. 15.

the case necessarily altered by the fact that buyers operate with borrowed money. Whatever credit is absorbed at one point is released at another point by payment for securities. The seller may use the money to finance his own business, or to pay off unsecured loans, or he may lend it to individuals who would otherwise themselves have become bank borrowers.

Similar considerations apply to the floating of new stocks. Stock market securities are merely evidence of the ownership of the capital of going industries. When a share of stock is first sold the issuing corporation gets the same amount of capital no matter whether the stock is bought by an investor out of savings or by a speculator who borrows the funds from someone else. And obviously it is no more likely to hold funds idle in the one case than in the other.

So far Professor Cassel is right. There are, however, two ways, not taken account of in this analysis, in which a stock market boom might "absorb" funds. One is the increased use of funds by brokers and speculators in financing the actual turnover of securities; the other is the creation of new deposits which remain idle in the hands of sold-out investors who believe that securities are over-valued. Both these points have to do solely with the effect of the boom on the volume of deposits which the banking system has to support; neither has anything to do with the volume of payments effected by these deposits.²⁰ So long as the volume of reserves required is determined by the volume of deposits outstanding, the effect of the stock market boom on the supply of bank

²⁰ Deposits created in the first way have the highest velocity of turnover to be found in the banking system; those created in the second way presumably turn over very slowly.

credit must be viewed in terms of its effect on the volume of deposits; only confusion results from attempts to relate the problem directly to the volume of payments to be effected.²¹

At first glance it would seem obvious that either an increased physical volume of stock market trading or an unchanged turnover of stocks at rising prices would require the maintenance of larger average cash balances on the part of both brokers and their customers. This is admitted by Professor Cassel in the following passage:

... The theory that the Stock Exchange absorbs capital must purport that the speculators pile up balances on current account to such a height that, in the last instance, the central bank has to increase its gold reserve. This reserve constitutes, however, only a small percentage of the banks' total sight deposits. The possible increase in the demand for gold is in any case of a totally different magnitude than the demand for capital to which allusion is made when people speak of the Stock Exchange and its absorption of capital.²²

This statement is not consistent with Professor Cassel's sweeping denials that stock market loans absorb *any* of the lending capacity of the banks, and moreover gives a misleading picture of the situation. The point at issue is not merely whether a central bank has to increase its gold reserves, but whether member banks have to replenish their reserves by using more central bank credit and as a result are led to pursue a more restrictive credit policy. If a central bank follows the established tradition of carrying a surplus reserve to enable it to exercise discretion in its operations, the pressure on the commercial

²¹ So acute a student as Balogh slips into this trap when he refers (*American Economic Review*, Vol. 20, p. 660) to the absorption of circulating media by "increased turnover and a tendency to build up cash reserves"; his argument supports only the last half of the phrase.

²² *Skandinaviska Kreditaktiebolaget Quarterly Report*, April 1929, p. 23.

banks normally begins before the central bank has to import gold.

Practically, however, the point is of no consequence, at least for American conditions, because the turnover is so high and so elastic as to make the necessary amount of brokers' deposits vanishingly small. Payments for stock are made largely by morning loans which are paid off during the course of the day. Longer loans may have to be made to pay for the net balance of stock delivered to brokers who have bought more than they have sold. But the funds paid over on a given day to a broker who has sold more stock than he has bought for that day's settlement will be used to pay off his carry-over loans or those of others, so that as a rule the whole expansion of the deposits resulting from the morning loans is cancelled before the close of business and does not appear on the banks' reports of deposits at the close of the day. There is no theoretical limit to the volume of business which can be supported by a given volume of reserves, if substantially everything is liquidated each day before the banks' statements are made up. As service balances required of brokers do not vary in proportion to their loans, as is customary with commercial loans, there is no theoretical necessity for brokers to increase their average balances as their turnover goes up. And in fact brokers' deposits do not, unless in periods of very slack business, represent more than an insignificant percentage of the amounts turned over through them.²³

²³ Rogers found that from 1922 to 1926 the volume of brokers' balances averaged about 20 million dollars, a wholly negligible item in comparison with the total volume of deposits which rests on the reserves of the Federal Reserve Bank of New York. (*Speculation and the Money Market*, p. 8.) For confirmation of the facts stated above I am indebted to Mr. George Weiss, who made inquiries in regard to brokers' practice from representatives of brokerage houses which in normal times do 25 to 30 per cent of the total volume of business at the Stock Exchange.

As to speculator's balances, statistical information is lacking. Reisch has made much of the lag in the flow of funds through the stock exchange mechanism, suggesting that balances obtained by the liquidation of securities may remain in the stock exchange circle for long periods of time, passing from one hand to another.²⁴ There seems to be no reason, however, why speculators should suffer the loss of interest involved in carrying large balances, even for short periods of time. Large sums can be loaned in the call market, and most speculators whose operations are not large enough to make the call market interesting carry their working balances on the books of brokers rather than of banks. Any tying up of reserves involved here must be insignificant.

Reference was made above to a second way in which a stock market boom may throw an increased load on the banks, and lessen their capacity to finance industry and commerce. This is through its tendency to encourage an indirect type of financing in which instead of investors owning stocks directly, the real investors carry bank deposits and the banks either own the securities or carry them as collateral for loans to speculators. The greater the proportion of this indirect investment the bigger is the body of bank reserves needed to finance a given volume of industry and trade at a given price level.²⁵

²⁴ "Rückwirkungen der Börsenspekulation auf der Kreditmarkt," *Zeitschrift für Nationalökonomie*, September 1929, Vol. 6, Heft 2.

²⁵ Of course there is nothing in this which is peculiar to the investment market. Reserves are released by any increase in the proportion of short-time commercial financing which is done by borrowing direct from individuals. This has been pointed out above in connection with brokers' loans, and is equally true of any other sort of loans. Anything which shortcuts the banking system and puts borrowers directly in touch with lenders economizes bank reserves.

Let us consider first the old securities. If the whole mass of securities which represent the country's productive resources were owned substantially outright by investors who did not borrow from banks in order to carry their holdings, all the existing bank reserves would be free to support the deposits arising out of commercial and industrial working capital loans and none would be required to support the investment structure. If in this situation part of the securities are sold either to banks or to speculators who carry their holdings on bank credit, the former owners must take newly created bank deposits in exchange. They may decide to use these new deposits in industry or lend them to those who would otherwise be applicants for bank loans, but they may not. If they do not, part of the bank reserves will be tied up in support of these investment deposits, and the supply of bank credit for other purposes will be correspondingly curtailed.

The case of the new security issues is similar. If new issues are bought by investors who pay for them out of savings there is no net increase in deposits and consequently no load is thrown on the banking system; but if the new securities are taken over directly or indirectly by the banks, and those who have done the saving keep their funds in the banks, then reserves are tied up. Anything which increases the proportion of investment which takes the form of bank deposits—time or demand—decreases the total capacity of the banks to furnish funds for other than investment purposes.²⁶

²⁶ One other point of minor importance must be noted also, namely, that an increased turnover of stocks tends to increase the size of the "float," that is, the amount of deposits which at the close of each day has been

So far, however, our conclusion relates only to the effect of speculative carrying of stocks on bank loans as compared with outright purchase by investors. It remains to inquire whether this conclusion has any relation to stock market activity. Neither a rise in stock prices nor an increased turnover of stocks necessarily means that bank credit is used to carry any larger volume of stocks than before. A priori we should expect, however, that a major rise in the prices of stocks will be accompanied by increased resort to banks to finance the holding of stocks, and observation confirms this.²⁷ The number of corporation stockholders increases in times of stock market depression and decreases in times of boom, which probably means that an increasing proportion of the stock passes, in times of lower security prices, into the hands of non-borrowing investors.²⁸

This conclusion is confirmed by data published by the United States Steel Corporation concerning the percentage of its common stock which is registered in brokers' names. The data are as follows:²⁹

created by crediting customers for checks on other banks which have not yet been paid.

²⁷ If the popular idea were correct that the public tends to buy stocks at top prices and professionals to buy them at the bottom the effect of the boom would be just the reverse of that suggested—that is, to decrease the total amount of bank credit used to finance long-time investment.

²⁸ A study made by Distributors' Group, Inc., showed an average increase of 49 per cent in the number of recorded common stockholders of 25 leading American corporations between 1929 and 1931. These 25 companies at the close of 1931 listed a total of 2,403,974 individual stockholders as compared with a total of 1,605,853 at the close of 1929.

²⁹ The percentages are annual averages computed from quarterly figures reported by the corporation. The basic data were taken from the *Survey of Current Business*, Annual Supplement, 1931, pp. 228-29; and *ibid.*, May 1932, p. 55.

STOCK MARKET CONTROL: OBJECTIVES 171

Year	Percentage of Stock Held by Brokers
1913	51.48
1914	46.73
1915	45.87
1916	55.08
1917	51.88
1918	43.22
1919	40.65
1920	30.65
1921	22.45
1922	24.36
1923	22.76
1924	22.97
1925	26.31
1926	28.01
1927	26.23
1928	23.69
1929	23.85
1930	18.84
1931	14.12

Though the most conspicuous thing about the figures is their downward trend, there is also some tendency for the holdings of brokers to increase in times of stock market enthusiasm.

The conclusion seems justified that one effect of a stock market boom is an increase in the proportion of the country's investment securities which is carried in the banks. The resultant increase in the use of deposits for investment purposes is the most plausible explanation of the discrepancy between the growth of bank deposits which occurred in this country between 1921 and 1930

and the contemporaneous movements of commodity prices and the volume of trade. The new balances were not currency deposits;³⁰ they were investments held by those who considered it better business to sacrifice current income for the sake of a more advantageous purchase at a later time. Such an increase even in the form of time deposits does necessitate higher bank reserves to carry the same volume of investment and could theoretically be of importance in cramping the expansion of trade. Anderson is right to this extent, and Cassel is wrong.³¹

It is to be emphasized, however, that there is not the slightest evidence that there was any serious locking up of deposits in speculation in 1928-29. Until well on in 1929 the growth of reserves was ample to keep pace with both the demands of industry and those of the investment market, as is evidenced by the lack of tension in the commercial paper and other short-term money markets. Because of the ease of flotation of stocks, many corporations were paying off their bank loans; the de-

³⁰ Note that the increase was much greater in time than in demand deposits—45 per cent as against 15 per cent for member banks of the Federal Reserve system from the end of 1924 to the end of 1929; 105 as against 50 if we count from the end of 1921—this difference was probably due also to the use of time deposits for purposes for which demand deposits were formerly customary.

³¹ However, Anderson goes too far in his generalization that stock market loans absorb as much credit as do commercial or real estate mortgage loans. The working balances required of commercial borrowers tie up a considerable body of reserves, and no corresponding immobilization of deposits occurs with brokers' loans. Moreover, a commercial and industrial expansion involves an increase in cash used for payrolls, till money, and pocket money; whereas, an expansion of credit in the stock market does not directly involve any added use of currency; and under our banking organization credit taken in the form of increased cash in circulation makes a drain on the lending capacity of the banks some ten times as great as that made by increased lending to finance operations carried on through checks and deposits exclusively.

mand for short-term credit was contracted quite as much as the supply.³² Short-term money remained cheap until 1928 when the Reserve system deliberately curtailed available reserves in order to tighten the money markets and check the stock market boom. Even then there was little evidence that business activity was adversely affected. The rate of production and the rate of employment rose in the first half of 1929. The credit pinch was felt much less here than in foreign countries from which gold was being drawn by the high rates offered for credit in New York.

Brief consideration may be given to the other arguments mentioned at the beginning of this chapter, which have been advanced by critics in justification of a restrictive policy though they have not been cited as standards by the Board or the Reserve Banks. These include, first, the impairment of the security behind bank loans from an over-valuing of stocks; second, the desirability of curbing speculation on account of its immoral character; third, prevention of the individual losses which attend a collapse and the depressing effect on trade which follows from such losses; and fourth, the direct effect of over-speculation in creating a trade boom by making long-time money abnormally cheap and by stimulating extravagant buying on the part of successful speculators.

The first and second of these points need not detain us long. From the standpoint of safety, speculative security collateral loans have proved themselves admirable bank investments. Their liquidity in ordinary times is excellent; in extraordinary times any type of

³² Compare pp. 269-72.

loan is likely to freeze up.³³ The facility with which bank officers can check up on the value of the collateral makes it easy to safeguard such loans. The danger of loss on account of a sudden collapse of values or drying-up of the market necessitates care in requiring an adequate margin, but it is easier to enforce the requirement that a margin shall be kept good with this class of loan than with any other. Even during the drastic liquidation period of 1929-31, call loans and time collateral loans on stock market collateral involved little loss to the banks.

The traditional hostility of this country to speculation on moral grounds has been a source of some pressure toward repressive action but has never been acknowledged by Reserve authorities as a guide to their policies, and probably has been of little real influence. The terms "speculation" and "legitimate business" are constantly used in antithesis, especially in Congressional debates and hearings. It is very widely assumed that any policy which minimizes the facility of speculative operations tends to support the foundations of morality.

The negative attitude of the Reserve system toward this argument seems to me correct, not because the moralists are 100 per cent wrong³⁴ but because the question involves a balancing of social values which is not a proper task for an administrative body. The issue is legislative in character. If the net balance of social advantages and disadvantages is against the stock exchange, the proper line of attack is either to prohibit security trading, or to make stock speculation more difficult and expensive.

³³ Compare Chap. XVII.

³⁴ I have discussed the social value of speculation in *Risk and Risk Bearing*, rev. ed., 1931, pp. 243-46.

There is no assurance, however, that such measures would interfere with the undesirable more than with the desirable features of the trade. In any case, the formulation of public policy in regard to speculation is the task of Congress and of the state legislatures. It is no part of the task of credit control to remodel our business life by attacking an institution with which the legislative authority, after repeated investigations, has so far declined to interfere.

Many critics have made the point that speculators who sell out on rising markets increase their consumptive expenditures. Complaints on this score rest on a fact of observation, namely, that certain types of expenditure are stimulated by the cashing in of profits on rising stock markets. It does not appear obvious, however, that this is a procedure about which there need be any alarm. The whole end and aim of the economic process is consumption. Complaints that a particular economic development is enabling individuals to expand their consumption are only significant if it can be assumed or proved either that the pre-existing allocation of our social income between consumption goods and production goods is ideal, or that the ideal proportion of consumption to savings is being exceeded. This seems by no means axiomatic.

As to the dangers inherent in the over-valuation of securities, the only way in which any administrative body could exercise supervision over stock values would be to assume that past precedents will govern in the future. Any one can tell when prices are at an unprecedented height—no one can tell how long they will stay there. Earnings and dividends we know something about, but the rate at which the public is willing to capitalize those

earnings and dividends no one can predict. For many years the element of safety in bonds was so over-valued that buyers of stocks on the whole came out better than buyers of bonds and buyers of second-grade bonds came out better than the buyers of first-class. Most stocks now seem to have been over-valued in comparison with other investments at 30 times earnings, but relative over-valuation is no proof of instability. Before the war, Iowa farm lands were capitalized on the basis of 40 times rents, and stayed at that level for years.

There are only two lines of argument in defense of the Reserve system's attack on the Stock Exchange which seem to me at all forceful. One of these is the fourth consideration suggested above, namely, that the security boom was, or threatened to become, the generating factor in a dangerous industrial or commercial boom. If excessive optimism expresses itself through a stock market boom, with the result that corporations are able to float an excessive volume of securities and thus obtain funds derived from an expansion of bank credit, the checking of the boom may turn out to be the sort of service which the Reserve system all along had held itself responsible to perform. If a stock market boom was the channel through which credit inflation was taking place, the maintenance of a sound credit situation would justify the checking of such a boom, though there would be so much the less argument for "direct pressure" to keep the effect of credit restriction localized in the Stock Exchange.

However, it seems reasonable to assume that if a stock market boom is enabling business to finance a boom by an expansion of bank credit, transmitted to industry

through the stock market channel, evidence of that fact ought to be found in the commodity markets and in the operations of industry. It is hardly safe to assume that, because stock prices are soaring, an excessive volume of investment, financed indirectly by bank credit, must be taking place.

The other legitimate ground of apprehension in connection with the boom concerns the effect of the growth of security loans and investments on the total volume of bank credit outstanding. Even though the deposits which were created on account of these assets were of the nature of investments rather than of currency, they increased the economic area subject to shock, and probably operated to intensify the depression of 1929-31, though they did not cause it. We consider this question more fully at a later point. Here it is sufficient to say that if the tendency to an expansion on the part of the banking system was dangerous—and I believe it was—the procedure was not to attack the stock market, but to bring pressure to bear upon the banks to decrease the volume and the proportion of their security holdings.³⁵

In my judgment, the case for the campaign against speculation was weak. It is easy now to see the evidence of over-optimism in the judgment of those who made the stock prices of 1929—though today's appraisals may look just as absurd three years hence. And it is easy to make the stock market boom the scapegoat for all the ills we have suffered since. But this is all post-rationalization, and is rooted in our ignorance of the forces that make one year briskly prosperous and another hopelessly depressed. There was no evidence in 1928 or 1929

³⁵ Compare pp. 271-72.

that business and agriculture were suffering from the competition of the stock market—there was only apprehension that such suffering might ensue.

There was no evidence until late in the spring of 1929 of the existence of an unsound credit situation, if the soundness of the credit situation was judged by the standards set up in the Federal Reserve Board's report for 1923 and in subsequent statements.³⁶ There was no evidence in 1928 or 1929 that brokers' loans were too high for safety, except that they were higher than a few years before. There was ground for apprehension that stock prices were, or would become, so high as to precipitate a crash, but the Reserve Board had no way to form an expert judgment on this question that was not open to the whole speculative public as well. To the conservative-minded, prices looked too high by the spring of 1928. They were just as high after the first great crash, say in December 1929, but they then appeared very low because everyone had become accustomed to the higher levels. There was really no reason to regard an index number of 151 as too low in December 1929, and one of 152 in May 1928 as too high; and no justification for trying to pull down the earlier figure and to bolster up the later one.

³⁶ Compare Chap. V.

CHAPTER IX

RESERVE CREDIT AND THE GOLD SUPPLY

Up to this point we have made only passing reference to the international movements of gold in their bearing on the problems of the Reserve system. This is not because the gold flow has been an unimportant factor in the problems with which the Reserve system has to deal, but because its control has not, save in one or two instances, been an objective of policy.

The large excess reserves which resulted from the gold imports of 1920-21 and the liquidation movement of 1921 made it possible to ignore the gold movements to an extent quite unparalleled in the history of central banking. While the movement of gold has at times interfered with the smooth working of Federal Reserve policy, and has made it impossible to make decisions on the basis of American credit conditions in detachment from those of the rest of the world, the necessity of protecting the gold reserve has not dominated the situation.¹

In this chapter we shall trace through the decade 1922-31 the time relationship of changes in the gold stock and changes in Reserve Bank assets in the hope of uncovering the mutual influences which credit policy and gold movements have had upon one another.²

¹ Compare footnote 12, p. 274.

² Throughout this chapter the terms inflow and outflow of gold are used as synonyms with increase and decrease of the monetary gold stock. Changes in the monetary gold stock correspond roughly to imports and exports of gold, since domestic production and domestic industrial consumption are approximately equal, but over short periods of time changes in the monetary gold stock may often vary considerably from net imports or exports because of the practice of "earmarking." Gold which is earmarked by a Federal Reserve Bank for the account of a foreign credit is counted out of the monetary stock just as though exported, and

I. THE GOLD MOVEMENT AND THE VOLUME OF CREDIT

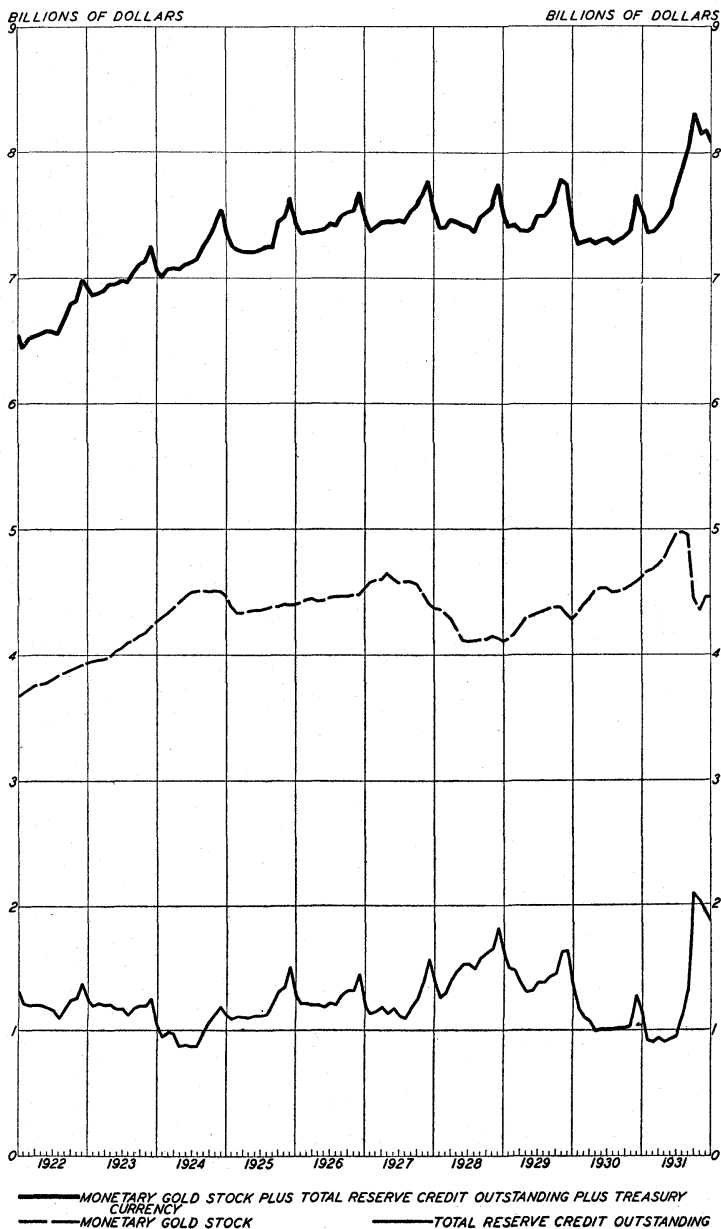
The accompanying chart shows the changes in the monetary gold stock of the country together with coincident changes in total Federal Reserve credit outstanding (government securities plus acceptances plus rediscounts), and the combined total of gold stock, Federal Reserve credit, and Treasury circulation. This combination makes up the supply of credit resources.

As the chart shows, there were, in the years from 1921 through 1931, three great waves of accumulation and disbursement of the monetary gold stock of the United States. The first increase shown, terminating in the middle of 1924, was the continuation of a movement which began in the middle of 1920 and was already past its most rapid stage at the time our story begins. This inflow, as we have pointed out elsewhere, was possible only because of the abandonment of the gold standard by most of the civilized nations of the world. Gold was not bought freely at the mints or central banks at its market value in the depressed currencies; hence the product of the mines and the gold which was released from hoards flowed to the countries where its market was the best. Except for shipment to America or to the Orient, gold was a frozen asset. This movement was wholly different in character from anything that has taken place since.

At first the gold imports raised no question of policy, partly because Reserve Bank ratios were very low, and

when it is released from earmarking it is of course added to the stock without appearing in the imports. For a discussion of the data see *Federal Reserve Bulletin*, 1927, Vol. 13, pp. 800-02, and 1929, Vol. 15, pp. 432-33.

SUPPORT FOR MEMBER BANK CREDIT, 1922-31



partly because member banks were so heavily in debt to the Reserve Banks and the demand of the public for bank loans was so light that the banks preferred to pay their debts rather than to try to expand credit. But with the termination of the acute stage of depression the member banks ceased to reduce their indebtedness and began to use the inflowing gold to increase their reserves.

This movement raised the question whether the Reserve system was to bring the gold into full use; that is, whether the Reserve Banks were to consider themselves free to expand their earning assets so long as they had themselves a safe margin above the legal requirement of a 40 per cent reserve against notes and a 35 per cent reserve against deposits. American tradition would have sanctioned such a policy. The reserves of the Federal Reserve system were now adequate to support a credit structure nearly twice as great as that which had collapsed in 1920. It might even have been possible to maintain such an expanded credit structure in the face of European stabilization, if the stabilization programs were carried through on the basis of the depreciated value of the currency units with gold reserves appropriate to the devalued currencies. However, in 1922 no Western European country had abandoned the idea of stabilizing on a gold basis, and many of these countries still contemplated stabilization at the old par values of their currencies. It was anticipated that whenever stabilization was effected, or seriously attempted, a large proportion of the gold which was coming to America would return to Europe.³

³ " . . . It has been held by some that the great supply of specie now in the Federal Reserve Banks and aggregating in the neighborhood of

For this reason and also because there was no disposition to face the probable domestic consequences of a fresh inflation, it was decided without hesitation and without controversy not to attempt to make the new gold the basis of a pyramid of Reserve credit. Therefore, either the required ratio had to be increased or the reserve ratio had to be abandoned as a guide. The solution of the problem was the policy of maintaining a "sound credit condition," which was discussed in Chapter V.

This policy did not mean, however, that the gold was sterilized. It meant only that there was no "secondary" expansion, that is, no expansion of Reserve Bank deposits and note issues on the basis of the use of the new gold as a 35-40 per cent reserve. How far the gold served as a basis of primary expansion, that is, pyramiding of member bank deposits, depended on the extent to which imports of gold were offset by contraction of Reserve credit. It is of importance, therefore, that we get a clear picture of the relationship between changes in the gold stock and changes in the sum of the gold stock and the outstanding volume of Federal Reserve credit.

In 1922, when business conditions were so bad that there was no apparent danger of inflation, member bank reserves were allowed to increase by nearly as much as the gold inflow, Federal Reserve credit showing little change.⁴ In 1923, on the other hand, when business was

3 billion dollars, is not normally the property of the United States and must eventually be expected to go back in part to the countries which are seeking to re-establish themselves upon a specie basis. This is undoubtedly true. . . ." (*Federal Reserve Bulletin*, 1922, Vol. 8, pp. 3-4.)

⁴ During the first week of 1922 there was a shrinkage of 170 million dollars in Federal Reserve credit, which is much more than the usual seasonal drop. This can fairly be regarded as the final phase of the

expanding with great rapidity, of the 300 million dollars of gold added to the national monetary stock, 140 million was offset by reduction of Federal Reserve credit, the balance being absorbed in the monetary circulation.⁵ In 1924, most of which was very unprosperous, reserves expanded by the full amount of the gold inflow. In 1925 a considerable loss of gold in the first half-year was offset by a more than seasonal shrinkage in monetary circulation and a reduction in member bank reserves. Federal Reserve credit did not expand to make up the loss. It did, however, expand more than seasonally in the last half of the year. For the whole period from the end of 1921 to the end of 1925, the volume of Reserve credit remained practically stationary except for (a) seasonal changes due to fluctuations in the currency requirements of the country which have no significance as indicators of over- or under-expansion of credit, and (b) a sharp decline and an equally sharp recovery in connection with the depression and revival of 1924. The net change for the four years was only 36 million dollars, or 2½ per cent. Changes in the volume of member bank reserves and in the currency circulation corresponded with surprising accuracy to changes in the gold supply.

In the next four years the relationship between gold and credit was entirely different. From the end of 1925 through 1929, instead of Federal Reserve credit alone it was the total credit base, consisting of Federal Reserve

1920-21 deflation. From the second week of January 1922 to the corresponding date in 1923 gold increased by 273 million dollars; member bank reserves by 208 million dollars; and non-member deposits by 31 million dollars.

⁵ The increase in monetary circulation was probably due in considerable part to an unusual absorption of American currency by foreign countries.

credit plus monetary gold stock plus Treasury currency,⁶ which tended to remain constant. During the first half of each year the sum of the Federal Reserve credit outstanding and the gold stock varied only slightly from 5,700 million dollars. In the second half of the year there was regularly an expansion of Reserve credit of 250 to 300 million dollars to take care of the increased demand for hand-to-hand currency. Aside from this seasonal adjustment, changes in gold stock and changes in Federal Reserve credit offset one another, sometimes because Reserve credit was expanded or contracted following a gold movement, sometimes because the gold movement adjusted itself to the Reserve situation in this country. In short, whereas from 1922 through 1925 the contribution of the Federal Reserve system to the credit resources of the world was approximately stable, in 1925-29 it was the *total* amount of support for currency and bank credit in the United States that was stable.

Finally, in 1930-31 we have still a different situation. In this period, especially in 1931, there was a great shrinkage both in the amount of Reserve credit and in the total of all forms of credit base which was effectively available to support member bank operations. This situation, however, is masked in the actual figures for 1931 by a great expansion of sterile credit in the form of hoarded notes.

The shrinkage in 1931 was no part of any Federal Reserve scheme of control. The case was similar to 1921. The tide of deflation was so strong that the gold supply and the Federal Reserve credit policy both ceased for

⁶ The Treasury currency changed so little after 1922 as to be of no consequence.

the time being to have any effect on the volume of borrowing. Through the first part of the year, bank credit was steadily liquidated under the influence of declining demand for customers' loans and growing scarcity of investments which were deemed to offer adequate security. And toward the end of the year currency hoarding and runs on banks instilled into the minds of bankers such a passion for liquidity that excess reserves appeared in unprecedented volume. Naturally the volume of bank reserves showed no consistent relationship either to gold flow or to Reserve system credit policy.

II. GOLD STOCK AND CREDIT POLICY

When confronted by a gold inflow, as was the Reserve system during most of the period under consideration, a central bank can be guided by standards of policy so different that there is room for disagreement even as to what is the distinction between a positive policy and a do-nothing policy. We may approach the question by stating first the extreme limits of a central bank's possible response to a gold inflow; then consider practical intermediate policies.

On the side of liberality the most extreme interpretation of central bank responsibility would demand that the bank expand its own operations, by security purchases and by encouraging borrowings, to the full amount which the new reserve would permit. On this basis the import of gold during the eight-year period which ended with the stock market crash of 1929 would have permitted an expansion of roughly 1,500 million dollars of Federal Reserve member bank reserves, instead of the 600 million dollar increase which actually occurred. This, of course, is merely a limiting figure, not a prac-

tical estimate, since it is based on the assumptions (a) that the pursuit of such an expansionist policy would not have reduced the amount of the gold inflow;⁷ (b) that the public could have been induced to carry 9 billion dollars of additional bank deposits without the necessity of the banks paying prohibitively high interest on these deposits; and (c) that the commercial banks could have increased their assets by some 9 billion dollars above the figures actually reached without running up the price of securities so high, and cutting their standards of safety of loans so low, that they would have preferred to carry excess reserves rather than to expand enough to use them. While no one, so far as I know, has explicitly argued for such a policy, its desirability seems to be the implicit assumption of those critics who accuse the Federal Reserve system of pursuing a radically deflationary policy.

The opposite extreme would be a policy of offsetting all gold imports by sales of securities and all exports by purchases, so that the credit element in the credit base would go down as fast as the gold element went up. The statement that it has been the Reserve system's policy to sterilize gold imports implies that the Reserve system practice has been governed by this extreme principle. In fact, the policy actually followed was almost as far from this extreme as from the other. For if such a policy had been followed from 1921 on we should have had at the end of 1929 (still assuming that the gold movement would have been the same as it actually was) member bank reserves of about 1,750 million dollars, instead of

⁷ It probably would not in fact have materially reduced the inflow in 1920-24, but would have had a great restrictive effect under the conditions which maintained from 1925 on.

2,374 million dollars. In January 1930 Federal Reserve credit outstanding would have been only about 700 million dollars instead of 1,300. No expansion of member bank credit would have taken place, except that which resulted from the substitution of time for demand deposits and the shifting of deposits from banks with high reserve ratios to those with low reserve ratios.

With such a policy in force a successful injection of new bank credit into the circulation would have tended to start an outflow of gold, and if the Reserve Banks cut off any compensating expansion of their own credit, the expansion of bank credit would have been checked by a shortage of Reserve funds. Vice versa, any shortage of credit which attracted currency from abroad would have tended to effect its own cure. This policy would have resulted in a maximum fluidity of gold as between countries, whereas the first policy would have tended to immobilize the gold where it was.

Both these statements are abstractions, and neither corresponds closely to reality. For 1922-25 the first comes nearer to a description of actual practice than does the second; during more recent years the second comes nearer what was actually done than does the first. There was never a stated policy of offsetting all gold gains and losses by countervailing credit operations. But as it has worked out, the policies of supplying credit in accordance with the banks' demands and stabilizing business conditions have in fact had much the same effect. If gold has come in at a time when the Reserve system was willing to have credit expanded, or gone out when the policy was to restrict credit, it has been allowed to have its normal effect. But if at any given time the business situation is considered satisfactory, since 1925 the prac-

tice has been to hold steady, not the Federal Reserve contribution to the credit supply, but the whole supply including the gold stock.

Sometimes the open market holdings have been expanded or contracted with a deliberate purpose of offsetting the gold movement.⁸ More often, what has happened has been that the banks have borrowed in order to get gold for export, or have paid off loans out of the proceeds of imports and the Reserve system has refrained from taking any steps to restore the former volume of Reserve credit. The general policy of adapting Reserve credit to the needs of the banks has meant that the changes in gold stock have been offset in large part by changes in Federal Reserve credit, whether such offset was purposely engineered or not.⁹ The result of these practices is that an expansion of Reserve credit prevents a gold outflow from tightening the money market, and a contraction prevents an inflow from easing it, and so it tends to run on till it is checked by the effect on foreign markets or by some extraneous circumstance. When a gold flow starts it sets in operation no forces

⁸ "At first the Reserve Banks pursued the policy of offsetting the effects of these decreases on the money market through purchases of securities, but after the beginning of November such purchases were both absolutely and relatively in much smaller volume. . . . The System's policy in not offsetting the gold exports in the last months of the year was formulated in consideration largely of the fact that in the absence of demand for additional credit from trade and industry there was a continued rapid growth in the volume of member bank credit used in investments and in loans on securities. . . ." (*Annual Report of the Federal Reserve Board*, 1927, p. 11.)

⁹ "The most important factor of decrease in the demand for Reserve Bank credit in 1929 was an inflow of gold from abroad during the first ten months of the year equivalent in volume to the loss of gold during 1928. . . ." (*Ibid.*, 1929, p. 13.) ". . . The inflow of gold from abroad and of currency from circulation had the effect of reducing the volume of Reserve Bank credit outstanding during the year. . . ." (*Ibid.*, 1930, p. 1.)

which will quickly check it. In this respect the situation in the United States, though less extreme, is similar in character to that which maintained in Europe before the stabilization of the currencies. This policy of neutralizing gold flows, is, I believe, the basic reason why the movements of gold, both in and out, have been of such vast proportions.¹⁰

III. WHAT POLICY SHOULD HAVE BEEN FOLLOWED?

We must consider next the highly theoretical question, namely, what is the proper responsibility of a banking system to the inflow and outflow of gold, assuming that its reserves are large enough to give it freedom to shape its policy as it pleases. The question breaks into two parts, according to the origin of the increased gold supply.

Gold newly mined or transferred from industrial to monetary uses is an inflationary element in the world's

¹⁰ Central banking practice in many other countries also reduces the self-regulating character of gold movements. In France there is direct relationship between the gold movement and the credit expansion, but the credit outstanding is mostly in the form of notes which expand and contract with gold inflow and outflow in only a 1-to-1 ratio; hence a gold movement produces a much smaller effect than it would produce here or in England in the absence of a policy of offsetting.

The explanation of the gold movement is, of course, much more complicated than the foregoing statement would imply. In the case of every one of our great gold movements there have been specific reasons, such as German accumulation after the adoption of the Dawes Plan; French accumulation in 1928; sales of American securities by foreigners during the stock market boom; gold hoarding in Europe in 1931; and so on. But the real problem is to explain not merely why this or that country took gold, but also why the movement was out of the United States rather than out of some other country, and in this explanation the policy of offset must have a prominent place. In at least one case; namely, in 1927, this policy was deliberately chosen in order to facilitate a redistribution of the gold.

currency just as much as is new bank credit or paper money. If we are to avoid all monetary disturbing influences on the equilibrium of production, and on the relations of debtors and creditors, the influence of new gold must be neutralized in some way. However, so long as the cost of gold production is not suddenly reduced by gold discoveries or by advancing technique, or gradually increased by exhaustion of the mines, the new gold is largely an offset to the deflationary effect which the increase of population would have if the money supply were constant. It is the assumption of the defenders of the pure gold standard that gold production and the growth of the world's need for gold can be expected roughly to compensate one another. The correctness of this assumption under present conditions we shall consider in connection with the contention that the gold of America should be transferred to countries which will make more active use of it.

International transfers of the gold which is already in monetary use present a problem of a different character. Gold shipments and earmarkings are the standard devices by which the existing volume of funds—regardless of whether it is too great or too small in the aggregate—is distributed to those parts of the world where funds are relatively scarce. Whether such movements should be neutralized or allowed to exercise their full effect on the money market of a given country depends on whether that country wishes to keep step with the rest of the world in the rate of credit expansion, or believes itself intelligent enough to discern, and strong enough to maintain, a more satisfactory rate. The latter policy means that the gold standard is in effect abandoned and replaced by a managed currency.

My judgment is that during the earlier part of the period which we have been studying, say till the stabilization of the British currency in the spring of 1925, there was a good case for endeavoring to keep outstanding the volume of currency which seemed most likely to maintain stability in the domestic situation, letting the incoming gold displace an equivalent amount of Reserve credit. From that time on through 1930 I believe it would have been better to go to the other extreme, letting gold exports and imports exert their maximum influence on the monetary situation.¹¹ I do not suppose that this would have made any great difference in the amount of credit that would actually have been outstanding at the close of the period, or at most times; it would have meant simply that gold movements in either direction would have been checked much more quickly by the tightening or easing of the market which they would have stimulated. In 1929, however, such a policy would have meant an early abandonment of the Federal Reserve Board's attempt to check the stock market by tightening the money market. I should regard this episode as one of the exceptional cases when a gold movement should be offset so far as possible by credit contraction, if I were otherwise in sympathy with the policies of 1929.¹²

The objection will at once suggest itself that the adoption of this policy would have tended to perpetuate the existing concentration of gold stocks in America. This is true. Gold will not move in large volume unless it is prevented from having its normal effect on the

¹¹ With reference to the function performed by gold movements as an index of credit conditions, compare p. 11.

¹² Compare Chap. VIII.

money markets of one or both of the countries concerned. There is no tendency toward an automatic restoration of the former proportionate holdings now that the banking structure of the world has been adjusted to the changed distribution which took place during the early post-war era of irredeemable currencies.

True, a large part of the United States gold stock is "free" so far as the Federal Reserve Banks are concerned; that is, it could go out of the Federal Reserve Banks without pulling their reserve ratios dangerously low. But the member bank reserves which were created by depositing gold when it came in are now an integral part of the credit structure of the country and cannot be liquidated without disaster. The only way the gold could get out of this country without an enormous deflation of bank credit would be for the Federal Reserve Banks to replace it with their own credit; and the only way it could be added to the reserves of another country without a corresponding inflation of their economic systems would be for the central bank of that country to contract its credit. A mutual operation of this sort could be engineered, without any effect on the banking structures of the two countries, except that the Federal Reserve Banks of the United States would earn more money and the central banks of the other countries concerned would earn less money.¹³ The benefit of this operation

¹³ Of course if the gold went into countries which used notes as the principal means of payment, the contraction of earning assets in the central banks of those countries would be much less than the expansion in the United States because typically the volume of notes pyramided on a given amount of gold is much smaller than the amount of bank credit which is pyramided upon it. This distinction, it may be added, is purely conventional. It does not correspond to any economic necessity for having a larger reserve against notes than against outstanding bank deposits.

would be that the country which got the gold would have a more adequate reserve for emergencies.

Such a mutual expansion of earning assets in America and contraction elsewhere is not, of course, what is contemplated by advocates of a redistribution of the world's gold supply. What is wanted is an expansion of the earning assets of the Federal Reserve Banks without any corresponding contraction elsewhere; probably a pyramid of further expansion in the credit structure of the rest of the world. This operation would be equivalent in its results to the sudden injection into the world's monetary stock of say half a billion or a billion dollars of new gold. Such a complete departure from the usual practice of central banking would have to be justified by evidence that there has occurred throughout the world either a great increase of the need for, or a great contraction of the supply of, the means of payment.¹⁴ The mere existence of a different distribution of gold from that existing before the war and the mere fact of a highly unequal distribution of the gold between different countries of the world are no evidence whatever of the need for a larger total supply of credit, and in the absence of evidence that the total supply of credit is becoming progressively less adequate, there is a presumption that the existing distribution is the best distribution.¹⁵

¹⁴ What has just been said refers, of course, to the situation of 1925 or 1928 rather than of 1930 or 1932. There is now no immediate danger of inflation; the problem is to check deflation. But neither is there any present problem of adequacy of reserves in the world's credit structure, nor will there be so long as the psychology of depression holds sway.

¹⁵ That is not to deny the occasional possibility of a useful redistribution whereby, in order to remedy a shortage of currency consequent upon the collapse of inflation, or in order to provide a newly established currency system with a suitable showpiece, a large quantity of gold is transferred under arrangements which neutralize the credit effect of its outflow.

Our problem involves, therefore, the question of the adequacy of the world's gold supply. And on this question I am disposed to state an opinion the full justification of which would be the task for a volume in itself.

As a matter of theory it can hardly be denied that the central banks of the world could by concerted action so manipulate credit as to offset the effect of a chronic shortage or a chronic plethora of gold. But I see no evidence that during the past ten years there has been any such gold shortage or surplus as would constitute a basis for central bank action. Certainly central bankers have not accepted the idea that there is any necessity for such action. As to the future of the gold supply, very pessimistic forecasts have been issued by eminent authorities, but there are comparatively few who believe that the gold supply has actually been so inadequate as to restrict productive activity or exert a downward pressure on prices.

My own judgment is, first, that there is so much uncertainty as to what the long-time trend of prices is at any given time that central bank policy can be predicated on the need of correcting the trend only in the case of very conspicuous and unusual disturbances of the gold supply such as extraordinary discoveries of new gold fields, and revolutionary improvements in the technique of obtaining gold, or, in the opposite direction, a persistent tightening of bank credit manifesting itself in substantially all countries. Second, I do not believe that the case for an impending shortage was at all conclusive, even before the recent drastic price declines. Third, it is obvious that the fall in the costs of gold mining in the last two years necessitates a complete revision of all forecasts, and such revisions have not yet been published by

any of those experts who have been pessimistic as to the outlook for sufficient gold to support the world's credit structure.

Should such a gold shortage ever appear, it would be a proper matter for concerted international action, but I see no reason to anticipate a need for it. Current pessimism about the gold situation, in so far as it is not a part of the general current frantic search for a scapegoat, reflects the unwillingness of certain sections of the public to face the necessity of effective action directed to the maintenance of the balance of international payments. But neither the necessity of such a balance nor the difficulty of maintaining it would be in any way affected by an increase in the world's gold supply or an international agreement to reduce the reserve ratios.¹⁶ The direction of the international movement of gold and the adequacy of the world's supply of gold are independent questions.

Though in general the presumption is in favor of letting gold have its full effect on the reserves of the member banks, situations are sure to arise from time to time when it will be necessary for the Reserve system to offset a gold movement by credit operations. The automatic operation of gold movements on the money market is like disarmament—an ideal which no nation can maintain alone. Whenever the principle of neutrality in credit policy is abandoned by countries whose monetary demands constitute a considerable fraction of the gold


¹⁶ Except to the extent that the burden of debt payments would be affected by rising and falling prices of the commodities which the debtor countries import and export. To a large extent this item cancels out, but in the case of countries which have a heavy excess of outgoing over incoming payments on account of public and private debts, it is a matter of real importance.

market of the world, the whole setting of the problem is changed for every other country.

If there is a general trend toward expansion or deflation, the balance of payments of any one country will be disturbed by its deviation from this general trend rather than from a policy of strict neutrality. If artificially dear money draws gold into one country, only artificially dear money in other countries will check its flow; if cheap money drives gold out of one important country, another country cannot rely on the inflow as an evidence that its own credit policies are unduly restrictive. In 1921, for instance, had it not been for the accident of an enormous indebtedness of member banks at the Reserve Banks, reliance on the uncontrolled play of economic forces would have been as inconvenient for this country as would have been under normal circumstances a sudden quadrupling of the gold output of the world. Likewise the loss of gold by various European countries in 1929 was not the reflection of inflationary policies in those countries but of the sharp restriction of credit in America by the Federal Reserve system, and the maintenance of stability required credit expansion by their central banks, though from the standpoint of our Reserve authorities such a policy was very far from co-operative.

So long as the credit controllers of different countries have different ideas as to whether credit should be made more liberal there will be endless bickering and endless complaints about the failure of international co-operation. Two central banks can co-operate to make credit cheaper in both countries, or dearer in both; there is no technique by which they can co-operate to make it cheaper in one and dearer in the other. Nor is there any

technique which will redistribute the gold of the world except on the condition that the effects of the movement are compensated by central bank action, both in the country into which the gold goes and in that from which it comes. Hence the only way to avoid this conflict is to have a common idea as to what should be done about the total supply of monetary units in the world—or whether anything should be done.



CHAPTER X

STABILIZATION OF PRICES

So far we have said very little about the relationship between bank credit and commodity prices. In passing lightly over this phase of credit policy, we have followed the example of the Federal Reserve authorities themselves. The standard of Federal Reserve policy described in Chapter V treats price indexes as only one, and not necessarily the most important, set of data to be used in determining whether the "accommodation of credit and business" requires that credit be made easier, or tightened, or let alone. Likewise the standards of 1928-29 are not stated in terms of prices. There is, however, a considerable body of opinion which attaches a unique significance to stability of prices, and would impose on the Federal Reserve system the obligation to make price stabilization the chief, if not the sole, test of policy. To this suggestion we must now give critical attention.

When England faced the question of currency stabilization in 1924 and 1925, a determined effort was made by a very influential group of economic thinkers to obtain for stability of internal prices precedence over stability of foreign exchanges, as the direct goal of public policy. A "managed currency," that is, an irredeemable paper currency, was to be perpetuated, and it was to be the duty of its "managers" to stabilize the general price level by manipulating the bank rate and the quantity of currency. Mr. J. M. Keynes, who was a leader in this movement, has since worked out with great care the theoretical case for price stability as either the final goal

or the immediate test of central banking policy.¹ The late Professor R. A. Lehfeldt of the University of Johannesburg advocated control of the output of gold with stability of the price index as an objective. Other economists, led by Professor Gustav Cassel of Sweden, urged that the same objective be secured through central bank discount policy. Professor Cassel indeed contends that the maintenance of a stable price level is the sole duty of central banks.²

In this country Professor Irving Fisher has been for many years an untiring advocate of radical measures designed to stabilize the price level. The Stable Money Association, which was organized largely through his efforts, has for its objective the promotion of stability in general prices.³ It includes in its membership a considerable proportion of the professional economists in the country and a number of leading bankers and business men.

Adherents of the doctrine that the stabilization of commodity prices should be the sole or chief determinant of Federal Reserve policy have brought forward specific proposals in the form of the two Strong bills,⁴ on which hearings were held before the Banking and Currency Committee of the House of Representatives in

¹ J. M. Keynes, *A Treatise on Money*, reviewed by me in *American Economic Review*, March 1931, Vol. 21, pp. 150-155; and in the *Journal of Political Economy*, June 1931, Vol. 39, pp. 390-400.

² 70 Cong. 1 sess., *Stabilization*, Hearings on H.R. 11806, before Committee on Banking and Currency, pp. 373, 384.

³ The Association is "organized to extend the most effective method of preventing the vast, though subtle, evils arising from unsound and unstable money, and to promote a better understanding thereof, in the expectation that crystallized public opinion will result in constructive congressional action."

⁴ With reference to the Goldsborough bill see pp. 224-25.

1926, 1927, and 1928. The first of these bills⁵ was brief and pointed. It proposed to amend the Federal Reserve Act to provide that Federal Reserve Banks should:

Establish from time to time, subject to review and determination of the Federal Reserve Board, a rate of discount to be charged by such banks for each class of paper, which shall be made with a view to accommodating commerce and *promoting a stable price level for commodities in general. All of the powers of the Federal Reserve system shall be used for promoting stability in the price level.*⁶

Extended hearings were held on this bill in 1926 and 1927. Among the supporters of the bill were such well-known economists as Gustav Cassel, John R. Commons, Irving Fisher, James H. Rogers, Hudson B. Hastings, Willford I. King, Harry Gunnison Brown, Jeremiah W. Jenks, and Henry C. Taylor. The opponents were chiefly officials of the Federal Reserve system, and included Adolph C. Miller of the Federal Reserve Board, Governor Benjamin Strong of the Federal Reserve Bank of New York, W. W. Stewart, formerly head of the Division of Research and Statistics of the Federal Reserve Board, and E. A. Goldenweiser, the present head of that division. After the close of the hearings the bill was revised to take account of the criticisms which had been offered, and, as was vainly hoped, to make it acceptable to Federal Reserve authorities. In the task of revision, Congressman Strong had the assistance of Professor John R. Commons, who spent several months in obtaining the comments of leading authorities, and

⁵ 69 Cong. 1 sess., H.R. 7895.

⁶ The Federal Reserve Act at present provides that rates of discount shall be made with a view to accommodating commerce and business. The new matter that would have been added by the bill is italicized in the foregoing quotation.

working out successive drafts of the bill to take account of these criticisms.

The new bill⁷ was much less precise than was its predecessor as to the specific nature of the responsibility to be laid upon the Federal Reserve authorities. This vagueness was probably the result of attempts to work the bill into such form as to make it acceptable to individuals with widely differing views. Its chief provisions may be summarized as follows:

(1) The Federal Reserve system (which is defined so as to include the Federal Reserve Board, the Federal Reserve Banks, "and all committees, commissions, agents, and others under their direction, supervision or control") is to make stabilization of prices and of business conditions the primary objective of its credit policy.

(2) The decisions arrived at in carrying out this purpose, together with the reasons therefor, are to be published, at least annually.

(3) An extraordinarily extensive program of research is to be undertaken both by the Federal Reserve Board and by the twelve Federal Reserve Banks, the results to be communicated to Congress at least annually.

The controversy over the stabilization issue hinges chiefly upon differences of economic theory. It does not involve party traditions or conflicting sectional or class interests. For this reason the stabilization proposals have attracted little attention among the rank and file of business men, politicians, and publicists, and have been left to the consideration of a comparatively small number of thoughtful persons, in Congress, in the Federal Reserve system, and outside. At the hearings on the stabilization bills there was but little disagreement concerning the desirability of the objectives at which the bills

⁷ 70 Cong. 1 sess., H.R., 11806.

aimed, and the discussion was conducted with the utmost recognition of good faith and public spirit on the part of both sides. The positions of the leading proponents of the bills may be summarized as follows:

Advocates of stabilization stress the social losses which result from long slow changes of price levels. Such changes were the decline from 1873 to 1897 and the rise from 1897 to 1919. Certain evils are universally acknowledged to accompany these swings. A rise in prices encourages the accumulation of stocks of goods for speculative purposes, and thereby misleads producers as to the extent of real demand and stimulates the development of excess productive capacity. Rising prices also work a serious injury to persons whose incomes are not readily adjusted to the falling value of money. Those whose savings have gone into bonds, bank deposits, life insurance, and mortgages find that the buying power of their dollars shrinks, and they suffer losses from a situation for which they are in no way responsible. These results manifest themselves most strikingly in great war-time inflationary movements like those which carried the ruble and the mark down to the billionth part of their former values, but the same injustices occurred in less degree in all countries in the period of rising prices which preceded the World War.

Falling price levels, on the other hand, are believed to check business activity. Hand-to-mouth buying is encouraged and producers under-estimate the strength of demand. All borrowers suffer under a growing burden as their incomes go down while their debts remain fixed. Whether prices are adjusted downward through an abrupt crash, such as that of 1921, or a long gradual decline like that of 1873-97, the losses are unavoidable.

Whether prices rise or fall the losses of individuals are, of course, largely the counterpart of the gains of others. But it is always the case when income and wealth are redistributed that the losses of the unfortunate are more keenly felt, and are more conspicuous to the others, than the gains of the fortunate.

It is hoped through price stabilization to flatten out the curve of the so-called business cycle. It is argued that if we could prevent or greatly curtail the price swings which characterize business cycles we would thereby prevent the recurring waves of unemployment, falling prices, bankruptcies, and slack business, and also prevent the speculation and extravagance of the booms which usually precede and are generally believed to cause these depressions. Interest in this problem has been very keen in this country both among economists and among business men, ever since the slump of 1921, and especially since the end of 1929.

A third source of interest in stabilization is the problem of farm relief. During the past decade the level of farm prices has nearly always been lower in proportion to industrial prices than was the case just before the war, and every legislative proposal which bears in any way on prices has to take account of this situation. A prominent group of agricultural economists attributes a large share of the farmer's ills to a tendency for farm prices to fall faster than prices of other commodities in times when the general tendency of prices is downward. The price slump of 1920-21 and the slow decline which has been taking place in recent years have put the farmer at a disadvantage, and kept him there. Naturally stabilization proposals have a strong appeal to those friends of the farmer who accept these views.

The stabilization bills did not propose to confer any new powers upon the Federal Reserve Board to be used in carrying out the stabilization program. It was tacitly assumed that the present powers of the Board are ample for the purpose. Congressman Strong in introducing the second bill said: "Our Federal Reserve Board is controlling the gold level of the entire world." And Professor Commons said in 1927:

A legislative rule directing the Reserve system to stabilize the general level of wholesale prices calls for no additional powers to be granted to the System—it already has all the power needed and its lenders have the ability needed. They lack only a rule of stabilization.

The officials of the Federal Reserve system, however, hold a different opinion. Throughout the earlier hearings they not only dissented from the extreme view of their powers, but expressed grave doubts as to whether any legislative act could enable them to control price movements. To overcome this objection the revised bill carried the phrase "so far as such purposes may be accomplished by monetary and credit policy." In this form the bill is an expression of an ideal, but not of a specific obligation.

It was obvious, however, that the passage of the revised Strong bill would have carried with it an implication that the Reserve authorities can fairly be charged with serious responsibility for the movements of the price level. Officials of the Federal Reserve system who appeared before the Banking and Currency Committee were eager to controvert this assumption. Partly, of course, their attitude may be explained as the natural reluctance of any public official to assume more responsibility than he needs in order to carry out the

purposes in which he is interested. The difference of opinion goes deeper than that, however.

The advocates of price stabilization rested their case in part on the quantity theory of money and in part on an interpretation of recent Federal Reserve practice. A theoretical argument to the effect that the Federal Reserve system has full control of the price situation, based on the quantity theory of money, was offered by several witnesses. Professor Cassel said: "The general level of prices is exclusively a monetary question," and "the Federal Reserve system has no other function than to give the country a stable money."⁸ A fuller analysis was offered by Mr. Norman Lombard, executive secretary of the Stable Money Association, and by Professor Cassel. Mr. Lombard said:

There are four factors in the equation of exchange: The money in circulation (M), its velocity (V), the volume of trade (T), and the price level (P). MV/T equals P . If you want to stabilize the price level (P) you must stabilize the other side of the equation MV/T . Obviously the velocity of circulation is something not under government control. The volume of trade is something we do not want to control. In order to keep the price level constant, therefore, we must manipulate M ; and by manipulating M one way or the other you can keep a constant price level.

The Chairman: By manipulating the money in circulation?

Mr. Lombard: By manipulating the money in circulation, or the substitutes for money.

In addition to this theoretical argument, the advocates of the bill laid great stress on events which they interpret as constituting the successful application of the principles which they advocate. As Professor Fisher put it:

⁸ Hearings on H.R. 11806, p. 382.

The Federal Reserve Board has been doing, without any specific authority beyond the phrase in the Federal Reserve Act, 'accommodate commerce and business,' practically what is being proposed in this bill.

This idea was developed at length by Professor Commons, who held that the events of the first part of 1923 afforded an example of successful stabilization, and those of the rest of 1923 and of 1924 a case of unskillful management which resulted in unnecessary price fluctuations. Professor Commons did not deny the effect of non-monetary conditions on price averages, but held that by timely action these changes can and should be compensated.⁹

The opponents of the stabilization bills rejected both the economic theory and the interpretation of recent history set forth by its advocates. Their arguments may be summarized as follows:

First, they urged the danger that the bill would be regarded as a mandate to fix the prices of individual commodities, especially farm products. This risk was stressed especially by Governor Strong.

Second, they questioned the quantity theory of the relation of money and prices, and argued that it is impossible by credit manipulation to control either individual prices or the average of all prices.

Third, they claimed that a specific instruction to make stability of prices the objective of credit policy would rule out other tests of great importance. Stock prices, inventories, general business activity, and the condition of the money market itself were cited.

⁹ *Ibid.*, pp. 59-61, 427-31. See also testimony of W. T. Foster, 69 Cong. 1 sess., *Stabilization*, Hearings on H.R. 7895 before Committee on Banking and Currency, Part 1, pp. 185-89.

Fourth, they denied that the Federal Reserve system had actually stabilized the price level from 1922 to 1926 or 1927. They showed that during these years prices were stable only by comparison with the violent fluctuations of the war period from 1916 to 1921. "There is no period during the last quarter century, except the war period," said Mr. Stewart, "when prices have fluctuated over so wide a range as from 1922 to 1926."¹⁰

The Strong bills did not specify what sort of price index is to be used as a basis for stabilization. It has been generally assumed by American advocates of price stabilization that the choice of the index is a technical question which can be settled more or less indifferently in any one of several ways; or, at least that stabilization in terms of any one of the currently popular indexes would be better than no stabilization at all. Congressman Strong stated:

Personally I prefer the index number of the Bureau of Labor, because it has 404 commodities in general, which I believe is best for the country. But I was urged to suggest an index number, and after hearing various advocates of the different index numbers, realizing that it was a disputed proposition, I thought it best to only direct the Federal Reserve Board to use its powers for stabilization of the purchasing power of money, and leave to their investigation and study and judgment what was the best index number to use. . . .¹¹

The point is of considerable importance, for two reasons. In the first place, if the Federal Reserve system accepts

¹⁰ The detailed analysis later published by Wesley C. Mitchell in *Recent Economic Changes in the United States* (p. 896) points to the same conclusion. This investigation showed for wholesale prices an "amplitude of fluctuation" of 24 and 20 in the two cycles of 1922-24 and 1924-27 respectively, compared with 13 for the last pre-war cycle and 19.5 for the average of seven pre-war cycles.

¹¹ Hearings on H.R. 11806, p. 394.

a mandate to stabilize prices, the frequency of the occasions when it will have to take action of a positive character will depend to a large extent on the sensitiveness of the index which is chosen as a guide. As Mr. Hamlin said:

... There is great difference. For example, in the period from 1925 to 1927 the Bureau of Labor wholesale indexes show a price decline of about 12 per cent; but if you take the curve of the cost of living, the decline was barely 2 per cent. If you take a composite index like Mr. Snyder's, there was hardly any decline at all.¹²

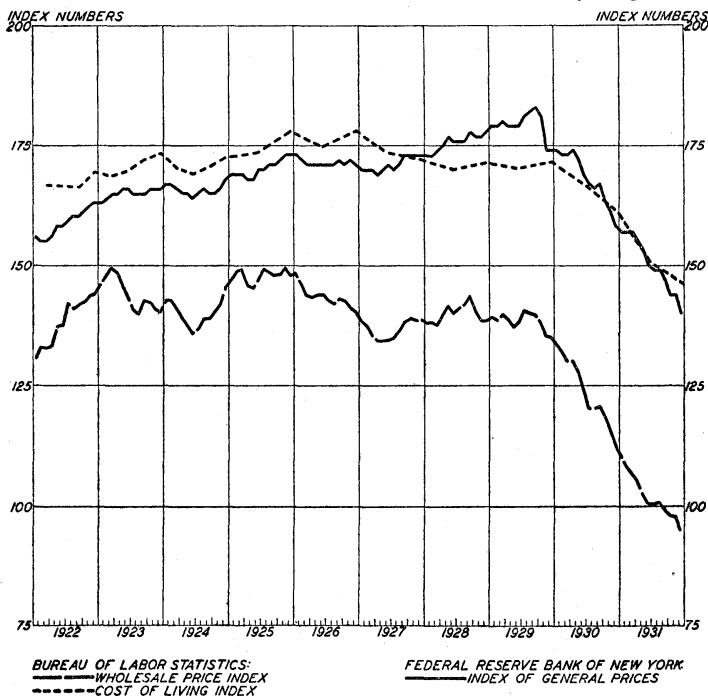
Wholesale prices always fluctuate more than retail prices and frequently make their turning points earlier. The degree of inflationary or deflationary activity needed to reverse a movement in the cost of living index might easily be an unstabilizing factor in the more sensitive wholesale field, and, vice versa, actions intended to check a movement in the wholesale field might easily be indicated at a time when the cost of living or the so-called general price level index was showing no change.

Moreover, it is quite often the case that for months at a time different types of index are moving in different directions. The chart on page 210 shows three of the most popular American indexes and brings out clearly the difficulty of determining what sort of action is called for by a movement of "the" price level. From December 1923 to December 1924, for instance, the cost of living showed a decline while the wholesale index and the general price level advanced. The same thing is true of the period from December 1921 to December 1922. From December 1922 to December 1923 the wholesale index fell by 2.6 points while the cost

¹² *Ibid.*, p. 393.

of living index rose by 3.7 points. From December 1927 to December 1928 the cost of living and wholesale prices moved in different directions.

A COMPARISON OF THREE PRICE INDEXES, 1922-31



The choice of an index number involves a choice between the different possible objectives. The various indexes are not different measures of the same thing; they are measures of different things, and the consequences of stabilizing them would not be identical. Let us examine first the so-called index of the general price level. This is a composite index which is designed to measure the price element in the total vol-

ume of monetary transactions—consequently it includes stock prices, wholesale and retail commodity prices, wages, and rents.¹³

The general price level, by the logic of its construction, is a device for portraying the movement of the equation of the exchange; a theoretical point of some interest to economists but one which has nothing to do with any of the suggested objectives of stabilization. The elements which are combined in this index are subject to such diverse influences that it is unlikely that they will all move together except in cases like 1921 and 1931 where all other influences are swamped by panic fears, or in cases like the German prices of 1923 where the situation is completely dominated by currency inflation.¹⁴ With component elements moving in different directions the movement of the index is merely a question of weighting. The only logical basis of weighting such an index is the relative volume of money payments involved in paying rents, buying stocks, financing retail trade, and so on. Such a weighting is defensible if one is merely interested in eliminating the price element from a series of miscellaneous monetary data, such as bank deposits, but no one can seriously argue that the importance of stock prices as compared with the cost of living, for the purpose of adjusting the equities between debtors and creditors, has any relationship to the relative volume of money turned over in the stock exchange and in the retail markets. Nor is it clear that the movement of such an index would have any predictable relationship to

¹³ Carl Snyder, "The Measurement of the General Price Level," *Review of Economic Statistics*, 1928, Vol. 10, pp. 40-52.

¹⁴ Even in such a case bond prices move independently.

the stability of business conditions. That this is not a mere theoretical quibble is evident from a comparison of the movements of the general price level and the wholesale price level in the years between 1925 and 1929.

As between other indexes of the price level, the choice depends on two considerations: first, the objectives which we wish to accomplish, and second, the relative difficulties of compilation and interpretation of the various indexes. As has been noted, there are two chief objectives in the minds of the advocates of price stabilization—the stabilization of employment and business activity, and the maintenance of justice between debtor and creditor.

Justice between debtor and creditor, in so far as it is to be secured by price stabilization, necessitates a further choice between two ideals; namely, stabilization of the value of the debt to the lender, and stabilization of the effort required on the part of the borrower to discharge the debt. In a progressive society it is clear that these must diverge. To produce the same quantity of goods and services requires less and less human effort. If our aim is to insure that the lender shall get back the purchasing power with which he parted, we arrive at the cost of living index as the measure of the value of money.¹⁵ But stabilization of the sacrifice of paying a debt would call for stabilization in terms of an index of the factors of production. The first of these solutions aims to give all the gains of progress to the debtor,¹⁶ the second permits the creditor to share in

¹⁵ Compare Keynes, *Treatise on Money*, Vol. I, p. 54.

¹⁶ Compare Professor Commons' statement, Hearings on H.R. 11806, pp. 82, 100.

them. The first aims to give back to the creditor the real income which he gave up, the second aims to give him back the same proportionate share of the total income of the community. The first would be accomplished by a stabilization of the purchasing power of money against all forces which tend to change the price level, the second would be approximated by a procedure which stabilized against changes which are due to monetary inflation and deflation, including the effects of changes in the gold supply, but not against changes in prices which result from changes in the productivity of human effort.¹⁷

Looking at the matter from the standpoint of the debtor-creditor relationship, the choice of the majority, I think, would be the cost of living index, even if the compilation of an index of the productivity of human effort were feasible. But there are also very grave difficulties in the way of the computation of a cost of living index, especially for just those comparisons over long periods of time which are of chief importance in connection with the debtor-creditor relationship. The technical difficulties in the collection of comparable prices of consumption goods are enormous. Published quotations are obscured by differences of quality, even in current quotations, and historical comparisons of prices of most consumption goods are meaningless. Technological progress in the production of consumers' goods consists largely in improvement of the quality of things which keep the same name, and frequently keep the same price.

Moreover, the content of the standard of living changes radically from one generation to the next. Of what significance today would be an index of the cost

¹⁷ Compare below, pp. 218-19.

of the commodities which made up the standard of living of a typical American family in 1890 or 1860? Equally grave are the difficulties which confront us when we compare the standard of living of families of different income groups. The cost of living indexes which we have are chiefly based on working-class budgets. They are of interest in measuring real wages, but they do not correspond to the consumptive expenditures of those who are chiefly concerned in the equitable adjustment of long-time contracts and fixed salaries.

A wholesale index presents fewer difficulties of compilation and of interpretation of quotations. Most such indexes consist chiefly of raw materials which are standardized in quality and are quoted in open markets with tolerable frequency and accuracy. It is therefore a great temptation to use them as measures of the purchasing power of money. But the fact that they can be compiled readily must not blind us to their defects. The compilation of every index involves a bias in the direction of choosing commodities on which price quotations are easy to secure, and this bias is more influential in making up a wholesale index because the compiler has more freedom of choice. But those quotations which are easiest to get in satisfactory form are those which are made in highly competitive markets. In highly competitive markets prices fluctuate a great deal. The radical changes which take place in these wholesale markets, especially those for basic raw materials, do not reflect changes in the power of money to command the necessities and luxuries of life. It would be a bitter blow to the holder of a fixed income to have it reduced at a time when rent and milk and bread have not fallen in price at all, simply because the command

of money over pig iron and hay and raw cotton has increased.

Of greater importance than the question of justice between debtor and creditor is the stabilization of employment. It is often assumed that from this standpoint it is more important to stabilize the wholesale index than the retail index. But the only basis for this conclusion is the fact that the wholesale index fluctuates more in the course of a cycle than does the retail index. This does not mean that the stabilization of the wholesale index would of itself have a more wholesome influence on business than the stabilization of anything else that fluctuates in the course of a cycle—wages, for instance, or the volume of advertising.

Moreover, if our purpose is to stabilize business conditions, there is no basis, either theoretical or practical, for selecting any set of prices as the chief criterion of stability. Here the weight of the argument is all in favor of the position taken by the Federal Reserve Board and the Federal Reserve Banks, and outlined above in Chapter V. If the stability of business is our goal, and if we believe credit manipulation is a promising means of effecting it, why not be guided by employment, by profits, by interest rates, by any and all of the indexes of business activity rather than merely by a price index?

We can go a step further than this, however. Little as we know about the causes of the semi-rhythmical movement of business activity, we can say without hesitation that the injection of new purchasing power into the markets of the world by inflation and deflation of currency and credit is an unstabilizing factor. At least this is true when the inflation is more than an offset

to changes in the seasonal, technical, or psychological need for currency and for credit balances. Price changes which are stimulated by fiscal or currency policy (and most of the illustrations used by the advocates of stabilization are drawn from periods of extreme currency inflation or deflation such as occur in connection with war) undoubtedly do disturb business equilibrium. If all price changes were of this character, price stabilization might well prove wholly practicable and wholly beneficial. But there are also price changes of a different character; price declines which are due to the progress of technique, invention, and the improvement of management; price advances which are due to the exhaustion of natural resources and the decay of economic power. To prevent these changes by credit policy—assuming it to be practicable—would require the continuous injection of new purchasing power into the markets, or its continuous withdrawal. Would such activity be a stabilizing or a disturbing factor in the business situation? Should we stabilize against all price changes or only against those of monetary origin?¹⁸

This brings us back to the same question, in a dif-

¹⁸ Professor Sprague's opinion on this point is of interest:

"I noticed a statement by one professor a short time ago . . . to the effect that the decline in prices of 1926 and the first part of 1927, when business was very active, was the prime cause of the subsequent recession in business in the latter part of 1927. Now, I am not prepared to accept that for a moment. In my judgment, in that period of 1926 and the first half of 1927, of very active business, had the Federal Reserve Banks, because prices were declining somewhat, injected more credit into the situation, it would have developed at many points unsound conditions in business which would have been followed by a more serious amount of recession in the latter part of 1927, or possibly at the present time. . . ." (Hearings on H.R. 11806, p. 135. Compare also F. A. Hayek, "Das Schicksal der Goldwährung," *Der Deutsche Volkswirt*, Feb. 12, 1932, pp. 642-45.)

ferent form, which we considered above (page 212) in connection with the problem of determining justice between debtors and creditors; that is, would it be desirable to stabilize the value of the products of human effort or the valuation put on the effort itself? For the chief non-monetary cause of price level changes is the increasing productivity of human labor and capital.

The Strong bills did not discriminate between changes due to monetary and those due to non-monetary causes. Opponents of the stabilization program made much of this distinction and contended that it is undesirable to stabilize against those price changes which are due to non-monetary conditions. Thus Mr. Hamlin said:

I put myself this question as a test: Suppose that gold, over a certain period, is perfectly stable; there is neither appreciation nor depreciation; but suppose there has been a decline in the wholesale index numbers caused by some very great improvements in productive processes, inventions, savings in costs, and so forth, which bring down the wholesale level of prices, and that those same inventions and improved processes have taken place in Europe as well as in the United States. Under the bill as I have suggested changing it, would it be my duty to regard that reduction as an evil and to stabilize prices at a higher level, knowing that at that higher level, with no change in Europe, with no stabilization in Europe, it would mean serious injury to our export trade and would mean such a flood of imports that we would have to have a mountainous tariff to shut them out?

That was the question that I put to myself as a test; and I reached the conclusion that under the bill, with the suggestions I have made, I would not be obliged to try to keep that price level up; in other words, that a lower base of wholesale prices brought about by improvements in productive processes

would be perfectly consistent with a stable condition of agriculture, industry, and commerce.¹⁹

And Mr. Miller said:

... It is a wholesome thing when the price level goes down because of improved industrial productivity and business management; in fact, I should say that the factor of "management" in industry is entitled to have its place in the scheme of price movements just as you would have the factor of "management" in central or reserve banks.²⁰

This is a point of great theoretical importance. According to the tradition of the American school of quantity theorists, the costs of production of individual commodities, as affected by changing technique, cannot influence the general average of prices (except as they may increase the total amount of business to be done with a given quantity of money).²¹ But a number of European scholars who would be classified in America as monetary theorists recognize the distinction as valid, and conclude that the correct object of stabilization is not the commodity price level but a price level of the factors of production—in other words, the price level corrected for the effects of technological change.²²

¹⁹ Hearings on H.R. 11806, p. 394. Mr. Hamlin had suggested that the bill be amended to provide that the Federal Reserve system should endeavor to maintain a "stable gold standard" and to "furnish credit facilities commensurate with the requirements of credit stability of agriculture, industry, employment and of the purchasing power of the dollar." (*Ibid.*, p. 393.)

²⁰ *Ibid.*, p. 356.

²¹ Compare Irving Fisher, *The Purchasing Power of Money*, pp. 178-81.

²² This is the view of Hawtrey, as presented in "Money and Index Numbers," *Journal of the Royal Statistical Society*, 1930, Vol. 93, pp. 64-85; and of Haberler "Die Kaufkraft des Geldes und die Stabilisierung der Wirtschaft," *Schmoller's Jahrbuch*, 1932, Vol. 55, pp. 993-1023. Keynes disagreed in 1930 (see discussion of Hawtrey's paper, reference just cited, p. 86), though the logic of his "equation of ex-

The experience of the years from 1922 to 1929 seems to indicate that this point is not merely a fine-spun logical play of the arm-chair economist, but a fatal objection to the use of a commodity price index as an index of the presence of inflation or deflation. Prices, both wholesale and retail, declined, and the stabilization advocates would have had the Reserve system resort to inflation to stop the movement—though even then they were somewhat restrained by the buoyancy of the stock market. Looking back now it appears probable that those years were years of mild credit inflation which was offset by the downward pressure on prices exerted by technological change.

The preceding discussion has no doubt made it clear that my own conclusions as to the merits of stabilization are unfavorable. My reasons may be summarized as follows:

1. *The price level is not readily controlled by credit manipulation.* If we are doubtful about the efficacy of the control of central bank activity, and I have indicated in Chapter V that there is room for doubt, the choice of a price index as the immediate object of stabilization does nothing to remove those doubts. If we cannot stabilize business activity by adjusting credit to business conditions as observed directly, we can scarcely hope to stabilize it indirectly by action taken on the basis of a price index which may or may not reflect the course of business.

The effect of a change in the cost of credit on the price level is much less definitely predictable than is

change" seems to point to the same conclusion. Compare his reference to efficiency earnings, *Treatise on Money*, Vol. I, p. 136. See also footnote 31, p. 225.

generally assumed by advocates of the stabilization doctrine. The quantity of bank credit outstanding is a factor, but only one factor, in the determination of the price level. Equally important is the willingness of the community to hold a larger or smaller part of its available resources in the comparatively unproductive form of cash and bank balances. The greater the demand for till and pocket money and bank balances as a form of saving, the larger the amount of credit that must be outstanding to support a given price level. These demands are affected by changes in population, by the growth of the use of checks, by the multiplication or consolidation of individual business units, by changes in the banks' requirements as to average balances, and above all (so far as short period changes are concerned) by anticipated changes in the level of prices. When prices are moving up or are expected to move up, depositors prefer to carry small balances and keep their funds invested; when falling prices are anticipated bank balances are deemed better investments than commodities or securities.

Of course, given time enough and a disregard for all other considerations, all these changes can presumably be offset and a downward trend reversed by a sufficiently vigorous open market policy. But this would not mean stability, it would mean a different set of fluctuations, perhaps as great as those we have now. The experience of 1930-32 indicates that a price change can run very far in the face of determined efforts to reverse it by credit policy.

2. *The volume of credit outstanding is not susceptible of direct control.* The Reserve system can make money rates low—that is open market rates, on high-

grade short-term instruments. It can also influence the yields of those high-grade seasoned securities on which the risk is little affected by fluctuations in profits and in public confidence in the future. Customers' rates which govern over 80 per cent of bank lending are much less responsive to discount policy. Still less responsive are the yields of stocks and speculative bonds.²³

But the demand for short-term funds is inelastic and highly variable. In times when credit is being liquidated, the lowering of the rediscount rates has very little significance. The purchase of securities by the Reserve Banks has somewhat more effect on the volume of credit than have changes in the rediscount rate, but its primary incidence is on the rates charged in the open market. It does not produce corresponding changes in the amount of credit taken by business men. Reference has been made to the situation in 1924.²⁴ In the twelve months from October 31, 1923 to October 31, 1924 the Reserve Banks increased their open market holdings from 296 million dollars to 784 million, yet during that time the total of Reserve Bank credit outstanding decreased by 130 million dollars.²⁵

In times of tight money, changes in the credit policy of the Reserve system are somewhat more effective, but rate policy is restricted by international competition, and even if Reserve credit is arbitrarily restricted the banks still have a choice between curtailing the credit extended to their customers and securing additional credit from abroad. The pool of credit is international

²³ Compare R. N. Owens and C. O. Hardy, *Interest Rates and Stock Speculation*, rev. ed., 1930, especially Chaps. VIII and XI and Appendix H.

²⁴ See pp. 42-43 and 81.

²⁵ Compare p. 234.

in extent; it is impossible for the banking system of any one country to expand or curtail credit unless it can carry the rest of the world along also.²⁶ This suggests a third difficulty.

3. *The policy of price stabilization is incompatible with the maintenance of the gold standard.*²⁷ Under the plan of stabilizing prices through credit control, any change in domestic prices which might result from the stabilizers' efforts would create a divergence between the purchasing power of gold at home and abroad. This would stimulate a gold movement, outward when prices were raised by credit expansion and inward when they were lowered by credit contraction, which would work directly against the stabilizers' plans. No country could hope to hold its own price stable in the face of a world-wide change in the value of gold, and at the same time keep its currency freely interchangeable with gold in the world's markets at a fixed ratio.²⁸

4. *A serious, though perhaps not fatal, objection lies in the lack of a satisfactory index number.* This point has been elucidated above (pages 210-17). Advocates of stabilization are disposed to wave the difficulty aside, alleging that all index numbers give such similar results that mistakes in the choice of the components would

²⁶ Governor Hjalmar Schacht of the Reichsbank said: "There are two Reichsbanks in Germany; the one which we represent, and the one which consists of foreign credits." Unterausschuss für Geld-, Kredit- und Finanzwesen, *Die Reichsbank*, Berlin, 1929, p. 203.

²⁷ It may be rejoined that the maintenance of price stability is more important than the maintenance of the gold standard. The possibility of substituting for the present gold standard a paper standard, managed in the interest of price stability, is a tempting subject of analysis, but would carry the discussion beyond the scope of the present volume.

²⁸ For a similar conclusion compare Lionel D. Edie, "The 1928 Hearings on the Strong Bill," *Journal of Political Economy*, 1929, Vol. 37, P. 354.

make little difference. It is true that almost any index number shows prices lower in 1921 than in 1920, and lower in 1930 than in 1929. But a stabilization program requires more than a rough measure. The stabilization plan would have to define the amount which was to be considered significant and the interval after a turning point in prices when action would be called for. Hence even minor differences would be important.

5. *The proposal to make stability of commodity prices the sole test of Reserve policy is too restrictive.* It would force Reserve authorities either to ignore conditions which may be of fundamental importance, such as speculative activity, international considerations, the accumulation of inventories, the state of employment—unless indeed there should arise a strained system of interpretation which would bring any and every important consideration under the rubric of price stabilization through the supposed influence of anything and everything on long-run stability of prices.

6. *The stabilization of prices against the consequences of technological progress may involve creation of instability of productive activity.* The grounds for this apprehension have been noted above (pages 216-17). No one would argue that it would be possible, without great risk, to stabilize the prices of those commodities whose costs are falling most rapidly; what better reason is there to think that we can safely tamper with the currency so as to offset the normal price effects of the falling real costs of a great number of commodities?

For these reasons I believe that the program of the stabilizers should be rejected. We have taken great risks in entrusting to the Federal Reserve Board and

the Federal Reserve Banks the power to manipulate the money markets according to their judgment of what is good for industry, agriculture, and trade; a mandate to use the stability of the price level as their sole guide would reduce the probability of benefit from the existence of the System, without materially lessening the risks.

Addendum:

After this chapter was ready for the press the stabilization question was reopened by the campaign for the Goldsborough bill which as originally introduced combined the principal features of the Strong bills and the pre-war suggestion of Irving Fisher for the establishment of a tabular standard, or flexible dollar. The bill as it was introduced read as follows:

Be it enacted, etc., That the Federal Reserve Act is amended by adding at the end thereof a new section to read as follows:

"Sec. 31. The Federal Reserve Board and the Federal Reserve Banks are hereby authorized and directed to take all available steps to raise the present deflated wholesale commodity level of prices as speedily as possible to the level existing before the present deflation, and afterwards to use all available means to maintain such wholesale commodity level of prices."

Sec. 2. If, in carrying out the purposes of the preceding section, the Federal Reserve Board and/or the Federal Reserve Banks, in selling securities, should exhaust the supply, the Federal Reserve Board is authorized and directed to issue new debentures.

Sec. 3. If, in carrying out the purposes of Section 1, the gold reserve is deemed by the Federal Reserve Board to be too near to the prescribed minimum, the Board is authorized to raise the official price of gold if the other methods already authorized appear inadequate; if, on the other hand, the gold reserve ratio is deemed to be too high the Federal Reserve Board is author-

ized to lower the official price of gold if the other methods already authorized appear inadequate.²⁹

Public hearings were held on the bill in March and April 1932. It was reported out in modified form and was passed by the House on May 2 by a vote of 289 to 60. The revised bill read as follows:

Be it enacted, etc., That the Federal Reserve Act is amended by adding at the end thereof a new section to read as follows:

"Sec. 31. It is hereby declared to be the policy of the United States that the average purchasing power of the dollar as ascertained by the Department of Labor in the wholesale commodity markets for the period covering the years 1921 to 1929, inclusive, shall be restored and maintained by the control of the volume of credit and currency."

Sec. 2. The Federal Reserve Board, the Federal Reserve Banks, and the Secretary of the Treasury are hereby charged with the duty of making effective this policy.

Sec. 3. Acts and parts of Acts inconsistent with the terms of this Act are hereby repealed.³⁰

It will be noted that in the bill as passed the provision for changing the official price of gold has been stricken out. This leaves the bill substantially identical with the Strong bills except that (a) it specifies an index of the wholesale price level as the standard of stabilization, and (b) it provides that before the price average is stabilized it is to be raised to the level of 1921-29. In other words, it establishes for the immediate future a price-raising policy; and for the long run a price stabilization policy.³¹

²⁹ 72 Cong. 1 sess., H.R. 10517.

³⁰ 72 Cong. 1 sess., H.R. 11499.

³¹ Reference should be made also to 72 Cong. 1 sess., H.R. 11898, a bill to establish the "human effort monetary system," which came to my

attention after this chapter was in type. This bill would make stability of the wage rate of unskilled labor the sole test of monetary policy. This would be an approximation to the stabilization of the prices of the factors of production, it would not involve stabilization against the price consequences of technological improvements or of the exhaustion of natural resources. It would automatically take care of the increase in circulating medium needed to provide for the needs of an increasing population. The bill also proposes to strengthen the technique of control by authorizing the use of negative as well as positive interest rates if such action is necessary in order to stimulate an adequate expansion of currency in times when the wage trend is downward. Finally, the plan involves no effort to reconcile stabilization of the domestic value of money with the maintenance of the gold standard. Thus it avoids most of the objections to price stabilization which have been stressed in this chapter.

CHAPTER XI

EFFICACY OF THE RESERVE SYSTEM'S TECHNIQUE

An appraisal of the results which have been obtained from the attempts of the Reserve system to improve on the working of free competition in the money markets in the past ten years involves two kinds of issues; namely, the efficacy of the instruments of control which are at the disposal of the Reserve system, and the merits of the objectives at which the System has aimed. Final judgment on questions of the latter type can best be postponed until after we have considered in Part III a number of less conspicuous issues which have to do chiefly with the allocation of credit to different applicants and its issuance through the medium of different credit instruments. But the operations which were summarized in Chapter III and described more fully in Chapters IV to IX inclusive will suffice as a basis for judging the efficacy of the instruments of control which the Reserve system uses. How far does the actual growth of credit during the decade from 1922 through 1931 correspond to that which the Reserve system was aiming at?

Experience can never demonstrate in thoroughly satisfactory fashion the efficacy or futility of any economic technique. It is rarely possible to isolate the effects of a given policy from those of other conditions. Moreover when a policy fails there is always the possibility that the tools of control were not used with sufficient skill, vigor, or promptness to afford a test of their effectiveness. Nevertheless the experience of the past ten years is sufficient to throw a considerable amount of light on the ef-

fectiveness of the technique by which the Federal Reserve system, in common with other central banking systems, attempts to control the volume of credit and thereby the functioning of the money markets and the pace of business activity.

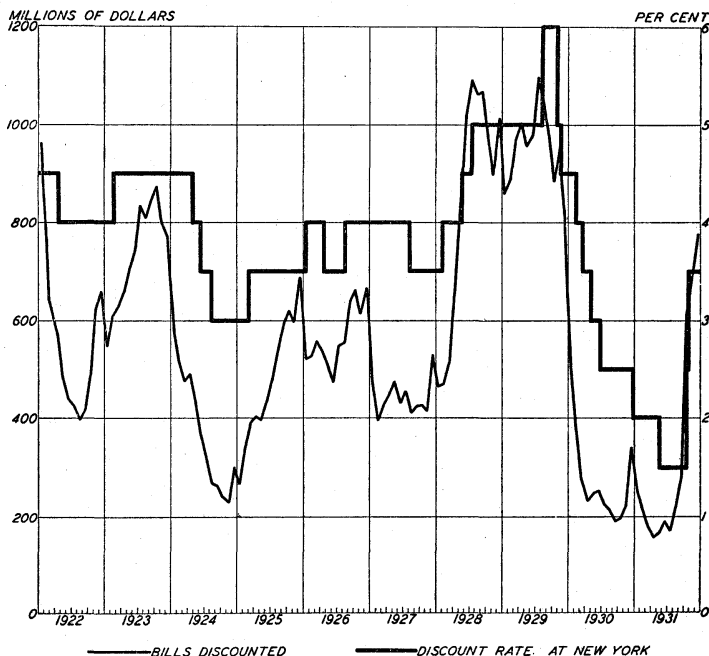
This is an issue of much greater importance than is the question whether at each successive critical point the Reserve system authorities have used the best of judgment. If the pace of business activity and the allocation of national income between consumption and investment are as completely subject to the control of credit authorities as is assumed in much current discussion, the way is open for a wiser use of the weapons of credit control to bring about stability and enduring prosperity in years to come. If, on the other hand, the real powers of the Reserve authorities are so limited that the best they can do is to facilitate adjustments of a relatively minor character, the sooner that fact is recognized, the better. Administration of the matters which fall within the genuine competence of the Reserve system will be greatly improved by relinquishment of any ambition to achieve the impossible.

As between the two chief tools for credit manipulation, the primary importance under present American conditions must be ascribed to the open market operations. The rediscount rate is not an effective instrument for controlling the volume of Federal Reserve Credit in use because member bank borrowing does not respond to rate changes. As is shown by the accompanying chart, rediscounts are usually low in times of low rates and high when rates are high. On the other hand there is a positive correlation between open market operations and the size

of member bank reserves, as is shown by the table on page 234.

The principal reasons for the absence of any inverse correspondence between the level of rates and the vol-

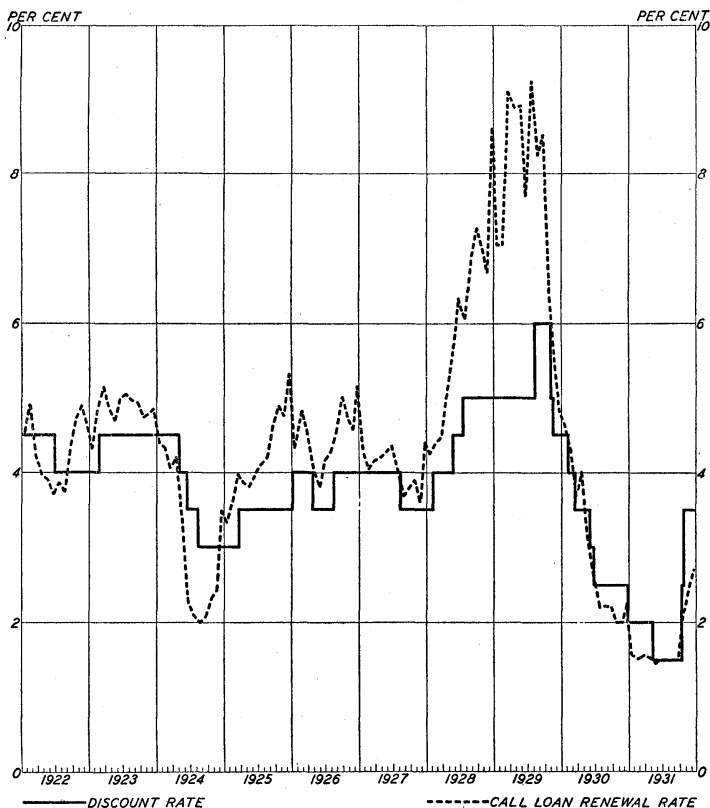
REDISCOUNT RATE AND VOLUME OF REDISCOUNTING, 1922-31



ume of borrowing are to be found in the open market operations and in the tradition against interbank borrowing to which reference was made in Chapter II. When it is desired to ease the market, securities are bought and the discount rate is lowered. The lowering of rediscount rates by itself would give some incentive

to banks to make added use of their rediscount facilities. But the fresh money which comes into the reserves of member banks on account of the open market purchases makes it their immediate problem to find uses for new

REDISCOUNT RATE AT NEW YORK COMPARED WITH CALL
LOAN RATE, 1922-31



money rather than to increase their balances by rediscounting. Under such circumstances the practical alternatives are either to buy securities, to increase open market loans, or to pay off rediscounts. The chart on page

229 shows that there is usually a profit in rediscounting so as to maintain call loans. This is also true of time collateral loans and of the purchase of commercial paper, though not of government securities and acceptances. But it is a well established principle that a bank ought not to borrow merely in order to relend at a profit. The Reserve Board says:

... in general it is not necessary to maintain a discount rate above the prevailing level of call loan rates in order to prevent member banks from borrowing at the Reserve Banks for the purpose of increasing their loans on securities. Member banks generally recognize that the proper occasion for borrowing at the Reserve Bank is for the purpose of meeting temporary and seasonal needs of their customers in excess of funds available out of the member banks' own resources; borrowing from the Reserve Bank for the purpose of enlarging their own operations is not considered a proper use of Reserve Bank credit either by the member banks or by the officers of the Federal Reserve Banks.¹

This tradition is in part an outgrowth of deliberate Reserve system policy; in part the survival of a pre-war tradition which made *any* sort of borrowing by a bank a confession of weakness; and in part an expression of a broader traditional principle that any sort of permanent capital investment—industrial, commercial, or agricultural—ought to be financed by long-time capital instruments rather than by short-term borrowing.²

The existence of this tradition leads the banks to apply the fresh reserve money first to paying off their

¹ *Annual Report of the Federal Reserve Board*, 1925, pp. 15-16. Again at a later date: "It is a generally recognized principle that Reserve Bank credit should not be used for profit, and that continuous indebtedness at the Reserve Banks, except under unusual circumstances, is an abuse of Reserve Bank facilities." (*Ibid.*, 1928, p. 8.) Compare also *ibid.*, 1926, pp. 4-5; W. W. Riefler, *Money Rates and Money Markets in the United States*, 1930, Chap. II.

² Compare 328-34.

borrowings, without much regard to the rate level. In the converse case, when sales of United States securities are made in large volume the banks lose reserves. They cannot sell securities except to one another, nor can they quickly collect any substantial amount of their outstanding loans. Consequently they borrow, at least temporarily, to replenish their reserves, and the higher rates which are exacted at such time have no apparent restrictive effect.³

So long as reliance is placed on quantitative rather than qualitative control of member bank credit, as it usually has been in the past,⁴ it makes little difference whether the rediscount rate is effective or not. Open market operations serve the same purpose. But if progress is ever to be made along the lines blocked out in 1929, by withdrawal of rediscount privilege from banks which do not support the Reserve Board's or the Reserve Banks' policies, it will be essential that much less use shall be made of open market operations and that rate control be substituted for a traditional ban on continuous borrowing as a means of keeping borrowing within limits.⁵ In that case it will be necessary to destroy the tradition against rediscounting. If the member banks were encouraged to borrow freely whenever they found it profitable to do so, a very high discount rate would be

³ Rediscount rates do, of course, influence the proportion of rediscounts to acceptances offered to the Reserve Banks. But as was shown in Chap. II, the purchase of acceptances is essentially of the character of rediscounting.

⁴ Compare pp. 124-28.

⁵ It is not an accident that A. C. Miller, the chief official advocate of qualitative control, is also the chief opponent of open market operations. Open market operations give the System no control whatever over the use made of their reserves by the member banks and hence no opportunity for the use of "direct pressure."

an effective check on excessive borrowing, and a low rate a stimulus to greater borrowing when the situation seemed to call for liberality. If this were to be done it might be necessary to vary rediscount rates over a wider range than is now customary, and perhaps to have a larger degree of geographical diversity of rates. Probably there would still be a great deal of difficulty in stimulating borrowing in times when public confidence is low. But within the range in which open market operations are now effective, the rediscount rate could be made effective, and open market operations dispensed with.

Aside from the question of relative effectiveness of the two standard methods of controlling credit, there is the more important question of the extent to which either one can be deemed adequate for the responsibilities which public opinion has imposed on the Reserve Board and the directors of the Reserve Banks.

In most cases the volume of outstanding credit shows considerable responsiveness to changes in Reserve system open market policy, though gold movements and repayment of borrowings may make it necessary to buy two or three dollars worth of bonds to put one dollar into the bank reserves. A comparison of recent changes in open market policy and changes in other money market items may be illuminating. During the period covered by our study the Reserve system made four distinct efforts to increase the volume of credit outstanding by buying securities, and two direct attempts to contract credit by selling them. The table on page 234 shows the time relationship between these movements and a number of related items.

It will be noted that there is a high degree of correspondence between the policy of the System as expressed

in the purchases of securities and the direction of change of member bank reserve balances. Repayment of indebtedness works against the changes in open market holdings, and often gold movements do so, but these offsets are not sufficient to cancel the effect of open market operations.

The effect on the loans and on the investments of reporting member banks presents an interesting contrast.

OPEN MARKET OPERATIONS AND THE MONEY MARKET^a
(Net change of monthly average; in millions of
dollars except as otherwise noted)

Item	March 1923 to November 1923	November 1923 to October 1924	May 1927 to December 1927	December 1927 to July 1929	October 1929 to December 1930	February 1932 to May 1932
ALL FEDERAL RESERVE BANKS:						
United States securities.....	-233	+ 502	+315	- 459	+ 490	+ 670
Rediscounts....	+171	- 559	+ 56	+ 567	- 547	- 362
Member bank reserve balances.	+ 2	+ 266	+137	- 65	+ 29	+ 231
REPORTING MEMBER BANKS:						
Loans.....	+179	+ 980	+730	+1,554	-1,374	- 1,009
Investments....	-260	+ 950	+324	- 403	+1,366	+ 346
Net demand deposits.....	-114	+1,767	+693	- 627	+ 206	+ 49
Net demand plus time deposits.	+ 16	+2,461	+999	- 373	+ 588	+ 24
MONETARY GOLD	+216	+ 324	-235	- 81	+ 202	- 111
STOCK:						
WHOLESALE PRICES^b:	-5.5	-0.2	+3.1	+1.2	-15.9	- 1.9

^a Compiled from *Annual Reports of the Federal Reserve Board* and from *Federal Reserve Bulletins*, Vol. 18, pp. 186, 352, 358, 400.

^b Bureau of Labor Statistics index; in points (average for 1926=100).

Bank investments in every case show a pronounced change in the same direction as Federal Reserve holdings of United States securities, while loans display no responsiveness whatever. This difference is to be explained partly by the fact that the public demand for loans cannot be quickly stimulated by the cheapening of money, and partly by the circumstance that cheap money periods are also periods when banks feel it necessary to be unusually cautious in their credit analysis.

In three of the six cases the movement of gold did not conform to that which theory would lead us to expect. In 1923-24 and in 1929-30 there was an increase in the gold stock in spite of an easy money policy and in 1927-29 there was a net loss in the period when security holdings were being drastically reduced. In the two cases first mentioned the explanation is obvious. In 1920-24, as was noted previously,⁶ so large a part of the world was off the gold standard that gold drifted steadily into the gold standard countries quite irrespective of their credit policies. The import of gold in the face of easy money from October 1929 to December 1930 is also accounted for by the fact that easy money policies here were matched or outdone by easy money policies everywhere else. The net loss of gold between December 1927 and July 1929 is more difficult to reconcile with what theory would lead us to anticipate. However, it is to be noted, first, that the net loss of gold was more than accounted for by the takings of France, all other countries showing a net loss to us during the period; and second, that the whole net loss and much more occurred in the first six months of the period and was the continuation of a movement which had started during the easy money

⁶ See p. 180.

period of 1927. For the last half of the period we gained gold with increasing rapidity.

Tentatively the situation may be summed up as follows:

1. The chain of causal relationships which it is desired to set up would run from open market policy to the reserves of member banks; thence to loans and investments on the one hand and deposits on the other; and finally to the buying policy of the public and the price level.

2. The first effect of reversal of open market policy is to stimulate a partial offsetting change in rediscounts (which is apparently not influenced significantly by rediscount rates).

3. A second probable effect (less certain to occur) is to divert the demand for funds for reserve purposes from the Reserve Banks to the foreign market, or vice versa, causing gold to flow in or out.

4. These offsets are not complete, however. Reserves of member banks do show some response to changes in open market policy.

5. Member banks' investment policy responds readily to an open market policy which is designed to further either expansion or contraction.

6. Loans at member banks do not show a tendency to expand and contract as Federal Reserve policy grows more and less liberal.

7. The price data, which represent the last stage in the chain of effects which is hoped for, show no evidence of any responsiveness to Reserve system policy. Any relationship which may exist here is obviously of a long-run character. It does not show itself in experiments which run only over periods of a year or two.

The two major factors which limit the control of the Reserve system over the volume of funds in use are the gold movement and the state of business sentiment. The nature of the relationship between credit expansion and gold movement has been indicated in Chapter II. Credit is highly fluid. If any central bank substantially increases the amount of purchasing power at the disposal of its own nationals some part of the new funds is certain to be expended or loaned abroad.⁷ Such a change will depress the foreign exchanges below the level at which they would otherwise stand, and presently, if both nations concerned are on the gold standard, will cause a gold flow—unless both nations are keeping step in the expansion. If the gold standard is not in effect the central bank's credit operations can reflect themselves in fluctuations in the exchange rates without causing any gold flow. If it is in effect in some countries and not in others, the new gold of the world is likely to move into the gold standard countries without much regard to credit policy, as was the case with the United States in 1921-24.⁸

Though in the absence of an effective gold standard the central bank is not restrained by the gold situation, the fluidity of capital none the less sets limits to credit control. If the central bank is charged with the obligation of keeping the value of the currency from fluctuating outside of prescribed limits, this obligation operates just as does the gold standard to deprive the central bank of full freedom of action in its efforts to stimulate business by credit expansion and check it by contraction. An expansion

⁷ Or to replace borrowing which would otherwise have been made abroad.

⁸ Movements of gold into countries not on the gold standard are chiefly due to special central bank or governmental operations which are not commercially profitable.

of the credit of the central bank is bound to have an adverse effect on the balance of payments. This will cause the currency to depreciate in terms of other currencies, and unless the depreciation is to be allowed to continue indefinitely, it will have to be countered by measures of restriction.

The largest degree of liberty of action is found in the case in which a country has abandoned all efforts to maintain the stability of its currency. Under such circumstances, for a brief period, the currency issuing authority is free to manipulate the volume of money without regard to the effect on exchange rates or gold reserves—though in practice such cases most often arise when fiscal necessities so completely dominate the situation as to make all other tests of credit policy irrelevant. The next largest degree of independence is that of a country which, having the gold standard, has a supply of gold so far in excess of its requirements that it can pursue the policies which seem most conducive to domestic or international prosperity without regard to their effect on the exchanges and on the gold stock.

Theoretically, the United States is in this latter position. In practice, however, public opinion still regards gold movements as so important a symptom of soundness of the policies pursued, that the Reserve system can only temporarily ignore them. The events of the winter of 1931-32 showed clearly that long before the gold flow becomes technically a necessary factor in the credit policy it becomes a psychological factor.

Of no less importance is our second limiting factor. The state of business sentiment affects the problem of credit control by determining the volume of currency which will be readily kept in circulation, the proportion

of cash to bank deposits held by the public, and the relative extent to which funds put into the banks by Reserve system operations will be used by the banks to support increased deposit liabilities or sent back to the Reserve Banks in repayment of borrowings. As is shown more fully in Chapter V the Reserve system apparently has a considerable power to hold down the amount of credit extended to the public by the banks in times of boom but very little power to bring about an increase in time of depression.

In summary, the Reserve system's control of rediscount rates and its open market operations constitute a crude and circuitous technique for controlling the state of the money markets, and through them the pace of business activity. It would be unjustifiable to impute to the Reserve system primary responsibility either for the prosperity which the country enjoyed during the major portion of the period under review, or for the disasters with which the decade closed. Nor does the recent experience of other countries point the way to a material strengthening of that technique. Nevertheless, the success of the Reserve system in dealing with minor disturbances and with seasonal fluctuations and the limited success which has attended its efforts to cope with major difficulties, do justify further effort along this line. Credit control is not a panacea; it is an experiment.

PART III
THE MINOR STANDARDS

CHAPTER XII

LIQUIDITY OF COMMERCIAL BANK ASSETS THE ACCEPTANCE MARKET

In Chapters XII and XIII we consider the policy of the System with respect to the types of credit instrument which Reserve Banks will either accept for rediscount or purchase in the open market, and the influence which the System has had on the composition of the portfolios of member banks. This subject breaks up into two parts, first the stimulation of the use of acceptances, and second the influence exerted on banks' lending practices through the standards of eligibility of paper for rediscount. The latter topic will be considered in Chapter XIII; here we examine the policies of the Reserve system which have had to do with the development of an acceptance market in the United States.

European banking practice, in contrast to our tradition, has always favored the use of acceptances or "bills." An acceptance is an order for payment drawn by one individual or corporation in favor of another and addressed to a third individual or corporation (frequently a bank) and "accepted" by the drawee.¹ A draft drawn by the seller of goods on the buyer is known as a "trade acceptance"; and a draft drawn on a bank and accepted on behalf of a client who has made the necessary arrangements with the bank, is known as a "bank acceptance." Though such drafts are sometimes based

¹ The act of acceptance consists of writing across the face the word "accepted" with the date and the signature of the drawee. This makes the drawee directly liable under the instrument, the liability of the drawer being that of an endorser.

on the individual credit of the drawer or of the client for whom the bank accepts, the rule is that an acceptance is based on an individual transaction in the marketing of goods and is to be liquidated out of the proceeds of the completed transaction.²

Bank acceptances are usually accompanied by shipping and other documents which evidence the commercial character of the transaction and make it impossible for the buyer to obtain possession of the goods until the draft has been properly accepted. Partly because acceptances always bear two or three names, but chiefly because of the intimate connection between the credit instrument and the underlying commercial transaction, European banking tradition regards the acceptance as the safest and most liquid of commercial instruments. In European central banking tradition the purchase of acceptances has long been regarded as the most appropriate means by which central banks may put their credit into the market.

At the time when the Federal Reserve system was created, neither the bank acceptance nor the trade acceptance had any important place in our financial system. American pre-war practice favored the use of single-name promissory notes not backed by documents evidencing individual transactions. Such notes might be secured by the deposit of marketable collateral or merely by the general credit of the maker. Collateral paper was used chiefly, but by no means exclusively, in the financing of the speculative and investment secu-

² A finance bill is a draft drawn by a bank in one country on a bank in another country and accepted without reference to any specific trade transaction. Such a bill is merely a device for making a direct loan on the general credit of the borrower, and has never shared in the prestige which attaches to the acceptance as an ideal credit instrument.

rity markets. Short-time borrowing for commercial and industrial purposes was done in two principal ways; namely, by the sale of commercial paper through note brokers, and by borrowing on a single-name note over the counter of the borrower's own bank. Over-the-counter credits might or might not be secured by collateral, but if they were secured the collateral ordinarily had no specific relationship to the transaction which the loan was intended to finance.³

The pre-war system of trade financing (which is in most respects the same today) may be described as follows: In wholesale trade goods were generally sold on a basis of credit, with a discount for cash payment. Probably the most frequent arrangement was 60 days' credit, with 2 per cent discount for payment within ten days. Banks financed trade on the basis of single-name promissory notes, paying little attention to individual transactions unless the latter were very large. So far as the buyer's credit permitted, he borrowed at the bank and took cash discount, the savings normally amounting to more than twice the bank interest. Sellers borrowed at the banks to obtain funds to carry those customers who did not take cash discount. In either case the assets were ordinarily not pledged but merely listed in a statement of condition, though in the financing of staples there was a considerable amount of lending on the collateral security of warehouse receipts and bills of lading. In the case of small corporations the personal endorsement of officials was often required. The bank was safeguarded by the requirement of a normal ratio of quick assets to current liabilities; the most frequent

³ The corresponding type of loan in English banking practice is the overdraft.

requirement being two-to-one. The net working capital, that is the difference between quick assets and current liabilities, had to be obtained by the investment of the proprietor or by the issuance of long-time securities.

Under the system in vogue in Europe, as we have stated, a large proportion of trade is financed by the use of acceptances representing the purchase price of goods. These acceptances are discounted at the seller's bank; or a bill accepted by a bank for the account of the buyer is sold in the open market. The former practice, known in America as the trade acceptance system, is applicable on the Continent to small domestic bills; the latter, the bank acceptance system, centers in the London market and is chiefly important in the financing of international trade where the individual transactions are larger and the underlying goods can be more readily levied upon and sold in case of default.

Obviously the discounting of a bill makes it regular practice to extend larger credit on the security of a given lot of goods than is the case where the borrower has to show a two-to-one ratio of quick assets to current debt. This does not necessarily mean, however, that under the American system the banks do a smaller proportion of the total financing. For the equity represented by the excess of current assets over current liabilities can be obtained by selling securities, and these securities to a very large extent are either bought by the banks as investments or carried by the banks as collateral for time and call loans to speculators. From the standpoint of the banker's need for a liquid investment, the American call loan is the counterpart of the European acceptance; while from the standpoint of the industrial borrower the fact that he can issue securities which are carried directly or indirectly by banks makes

up the difference between the 100 per cent credit he might have gotten by discounting a buyer's acceptance and the 50 per cent credit he could get if the bank loaned him funds to carry on his business on the basis of a two-to-one ratio. Obviously, however, the American system is more favorable than the European to the organization of business in units sufficiently large to make possible access to the open market for investment instruments.⁴

Following the creation of the Federal Reserve system there was organized a propaganda movement, having as its objective the popularization in the United States of both the bank and the trade acceptance. As is usual with propaganda movements, the claims made for the European system were a mixture of sound sense and wildest nonsense. It is unnecessary to recount the history of this effort, so far as the trade acceptance is concerned.⁵ Suffice it to say that the trade acceptance proved a complete fiasco.⁶ The labor and red tape in-

⁴ As we have pointed out, this advantage is accentuated by the practice of selling short-time paper in the open market, chiefly to banks. See pp. 337-40.

⁵ Compare H. Parker Willis, *The Federal Reserve System*, Chap. XLIII; Park Mathewson, *Acceptances, Trade and Bankers*, 1921.

⁶ No data are available as to the amount of trade acceptances outstanding, but some idea of the importance of the instrument may be gained from the part they have played in Reserve Bank rediscounting operations. At the end of 1920 trade acceptances made up less than 34 million dollars out of a total of 2700 million dollars of rediscounts. This was the peak figure so far as year-end holdings are concerned. The volume fell off rapidly and was below 4 million dollars at the end of 1924, and has never since exceeded that figure.

On June 27, 1932 a new effort to encourage the use of trade acceptances was launched by the Banking and Industrial Committee of Twelve, an organization of prominent business men which was formed to assist federal government agencies in furthering a credit expansion. At the time this volume goes to press it has not been indicated that the Federal Reserve Banks are making plans to support the trade acceptance market as they do the market for bankers' acceptances.

volved in handling acceptances proved a serious obstacle. Banks quickly grew fearful that the acceptance was merely a way of getting bigger loans on the same security—which was a fair inference from much of the propaganda literature. And in fact the buyers who were enthusiastic proved to be chiefly those who hoped to obtain larger credit lines than had been hitherto open to them.

The history of the bank acceptance was entirely different. The active efforts of reformers in this country were reinforced by world financial conditions which were very favorable to the transfer to New York of a considerable fraction of the acceptance business formerly handled through London. For a number of years the United States was the only leading nation with a stable currency. Later, as the stabilization movement gained headway, a new market for American acceptances opened up in the form of gold exchange reserves of Continental central banks. Finally, the Reserve Banks threw the weight of their influence very effectively back of the movement to build an acceptance market in the United States.

The Reserve system has made strenuous efforts to develop a market for acceptances. In pursuance of this policy the Reserve Banks stand ready at all times to purchase eligible bills at fixed rates in any quantity in which they may be offered. Although the purchase of an acceptance by a Reserve Bank is generally called an open market investment, it is really more closely akin to a rediscount than to other open market operations. Any bank which has eligible bills can replenish its reserves by selling the bills to the Reserve Banks at the published rates as certainly as it can secure funds

through rediscounting its commercial portfolio; hence the Reserve Banks can control the volume of their credit issued through the acceptance market only in the way that they control the amount of rediscounts, that is, through changing their buying rates. As was shown in Chapter XI, the quantity of reserve credit outstanding does not respond readily to control of this kind. Purchases and sales of United States securities, on the other hand, are undertaken at the initiative of the Reserve Banks, which buy and sell at rates fixed by the market such quantities of securities as may be deemed necessary to produce the results aimed at.

The similarity between acceptance purchases and rediscounts must not be exaggerated, however. From the standpoint of a member bank the sale of acceptances or customers' paper has the advantage that the funds so received are not shown in its reports as borrowings. Hence the expansion of credit through the acceptance route is not subject to the check which arises from the existence of a tradition against continuous rediscounting.

Special aid from the Reserve system for the acceptance market has taken four forms: first, special privileges to acceptance dealers in the form of "repurchase agreements"; second, endorsement of bills sold to foreign central banks; third, preference in the rates at which acceptances are bought as compared with rediscount rates; and, fourth, progressive lowering of the standards required for eligibility of acceptances for purchase.

Repurchase agreements afford dealers in acceptances direct access to Reserve Bank credit. The repurchase agreement, which is used both in the acceptance market and in that for short-time government securities, is an

agreement between a Federal Reserve Bank⁷ and certain recognized dealers whereby the dealers may sell securities to the Reserve Bank under contract to buy them back within 15 days at a fixed price. The price is so adjusted as to net the Reserve Bank the same rate of interest which it would earn if it bought the securities outright. The willingness of the banks to buy acceptances at all times, either outright or under repurchase agreement, makes them more attractive investments for banks and greatly lessens the risks of dealers.

The legality of the repurchase arrangement was strongly questioned by members of the House Committee on Banking and Currency at the hearings on the Strong bill, on the ground that it was merely a subterfuge to cover what are really collateral loans to dealers who are not members of the Federal Reserve system.⁸ Question was raised also as to the desirability of an arrangement whereby dealers in acceptances and securities, who are in no case members of the Reserve system, are given unrestricted access to Reserve funds at rates as low as are granted by the Reserve Bank to member banks, whereas any other business concern can secure Reserve credit only at a higher cost through the intermediation of a member bank.⁹

⁷ Such arrangements have been in force in recent years only at the Federal Reserve Banks of Boston, Dallas, New York, and San Francisco. (71 Cong. 3 sess., *Operations of the National and Federal Reserve Banking System*, Hearings on S. res. 71 before Committee on Banking and Currency, Part 6, pp. 935-38).

⁸ 69 Cong. 1 sess., *Stabilization*, Hearings on H.R. 7895 before Committee on Banking and Currency, Part 2, pp. 931-34, 981-91.

⁹ This objection has special force because of the fact that the accepting banks are not necessarily members of the Federal Reserve system, or even state banks. A number of the leading acceptors are private banks which make no public reports of conditions. They are required to file reports with some one Federal Reserve Bank but these reports are not

W. Randolph Burgess has been the chief spokesman of the Reserve system in defending this system, both at the hearings in question and in his published writings.¹⁰ Mr. Burgess says:

The practice is for the dealer to borrow from day to day in the money market the money with which he carries his stock. Ordinarily, the bill dealer can obtain call money at a rate about one-fourth to one-half per cent under the quoted market rate for call money because of the type of security he offers. But there are often times in the money market when money is not available at low enough rates; at these times the bill dealer needs some place of refuge where he may obtain funds to tide him over the temporary period of stringency. The Federal Reserve Banks furnish that place, for they always stand ready to buy bankers' acceptances at their current buying rates.¹¹

A fuller statement of Burgess' view is embodied in the following excerpt from the hearings:

Mr. Wingo. . . . This purchase and resale—what is the necessity and philosophy and influence that moved the Bank in establishing that custom?

Mr. Burgess. I would like to make three points on that, Mr. Wingo. The first one is that these dealers have a type of security which has a liquidity and a goodness which is totally different from the security of the business man. This paper in the bankers' acceptance market has two banks' names on it. The short-term Government manifestly is a security of the highest type so that the security is a very different proposition. The second point is that the existence of these markets is not only desirable, but is essential to carrying on a sound money market operation with central banks in the same way as they do in European countries. It is an essential way of giving elas-

made public, and no definite standards to which they must conform have been published.

¹⁰ *The Reserve Banks and the Money Market*, Chaps. VI and VIII, and *Journal of the American Bankers' Association*, November 1925, p. 329.

¹¹ *The Reserve Banks and the Money Market*, p. 141.

ticity to the money market and making possible a free flow of funds about the country.

.

We would have no American bill market and no market for short-term government securities if the Federal Reserve Banks did not have that arrangement.

Mr. Wingo. What is the reason?

Mr. Burgess. They cannot get the funds they require at a rate they can live on.

Mr. Wingo. The whole thing goes back to the rate, then?

Mr. Burgess. Yes, sir.

Mr. Wingo. The fact is you have one class of securities or people dealing with the Federal Reserve Banks that gets a preferential rate as compared with other interests in the country?

Mr. Burgess. Not compared with the member banks. Here is a group of bankers that are simply placed, because of the necessity of this operation, on a similar basis in getting funds with the member banks.

.

Mr. Wingo. . . . Why is it necessary? Why cannot that transaction, assuming that you are right—and I am inclined to think of course you are—that these bill dealers perform a very necessary function, if that is true, why cannot they come through the member banks just as any merchant can [assuming that it is legal]?

.

Mr. Burgess. It is simply a matter of the mechanism, a matter of fact. They cannot get the money.

Mr. Wingo. The reason is he cannot get the money at a rate he will pay.

Mr. Burgess. At a rate he can pay and survive.

Mr. Wingo. Is not that true of any merchant in Washington? If the rate that the banks charge him makes it impossible for him, in competition with his competitors, to give a sufficient return, he has to go out of business.

Mr. Burgess. Yes; but the banking situation is such that some other fellow can survive in the same business. Without the aid of the Reserve Banks the whole business of dealing in bills is unprofitable.

Mr. Goldsborough. Do you mean the bill dealer can get rates from the Bank of England, and for that reason the Federal Reserve thought it necessary to set up these rates in order to compete with the Bank of England?

Mr. Burgess. Not compete with the Bank of England.

The Chairman. But do a business similar to the Bank of England?

Mr. Burgess. Yes, sir. The bankers' acceptance business has proved a very valuable thing in England, a very important part of their money market.¹²

The case for continuous protection of dealers in acceptances against the risk of loss on account of a tightening of the money market is not on the face of things particularly convincing. The risk is one of the ordinary hazards of trade in financial instruments. A dealer in open market commercial paper, for example, has to carry a stock of paper on borrowed money. An adverse fluctuation in the cost of money may at any time wipe out the profits on the paper contained in his portfolio. Dealers in bonds and stocks run the same risk. It is all a question of rates. If the dealers had to protect themselves against adverse fluctuations of the money market they would have to have a somewhat wider margin of profit, or else work on a brokerage basis. If they cannot get an adequate margin of profit in the acceptance market, this means that the acceptance market does not, under American conditions, have sufficient vitality to carry its own costs.

The acceptance has tended to become more and more an instrument for financing transactions in which the turnover of capital is slow. The standard line of argument in favor of the acceptance as an ideal bank investment is that in the very nature of the case it is self-liquidating; that it is based on a specific transaction in an

¹² Hearings on H.R. 7895, Part 2, pp. 984-85.

identified lot of staple goods; that it will be liquidated automatically as the goods are paid for; and that in case of difficulty the creditor can always take possession of the goods and sell them to satisfy his claim. The history of the acceptance in recent years, however, has been that as its use broadens it tends more and more to lose its distinctive character. In this connection the distribution of the total amount among bills of different classes is illuminating.

The accompanying table shows, both in totals and in percentage terms, the number of bills issued to finance imports, exports, domestic shipments, the storage of goods in domestic warehouses, goods "stored abroad or shipped between foreign countries," and those issued to furnish "dollar exchange." The only one of these items which requires explanation is the last mentioned—drafts to create dollar exchange. Section 13 of the Federal Reserve Act provides that any member bank may accept 90-day drafts drawn upon it by banks or bankers in foreign countries or dependencies of the United States "for the purpose of furnishing dollar exchange as required by the usages of trade." Under this provision of the Act, the Board has authorized the acceptance of drafts drawn by banks or bankers in between 25 and 30 non-European countries.

A draft to create dollar exchange is simply the old finance bill¹⁸ under a new name—a device whereby a bank in the United States can make a direct short-term loan to a bank in a less developed country on no security other than the general credit of the borrowing bank. Such drafts have long played a useful part in the international distribution of capital, but there is no apparent

¹⁸ Compare p. 244.

BANKERS ACCEPTANCES OUTSTANDING, 1924-31^a

Classified by Basis of Credit

I. In Millions of Dollars

Class of Credit	1924	1925	1926	1927	1928	1929	1930	1931
Imports.....	292	311	283	313	316	383	221	159
Exports.....	305	297	261	391	497	524	415	222
Domestic shipments.....	38	26	29	21	16	23	35	16
Domestic warehouse credits.....	162	103	116	197	174	285	271	251
Goods stored abroad or shipped between foreign countries.....	—	17	40	131	243	441	561	296
Dollar exchange.....	23	19	26	28	39	76	52	31
Total.....	820	773	755	1,081	1,285	1,732	1,555	975

II. As a Percentage of Total

Imports.....	35.6	40.2	37.5	29.0	24.6	22.1	14.2	16.3
Exports.....	37.2	38.4	34.6	36.2	38.7	30.2	26.7	22.8
Domestic shipments.....	4.6	3.4	3.8	1.9	1.3	1.3	2.3	1.6
Domestic warehouse credits.....	19.8	13.3	15.4	18.2	13.5	16.5	17.4	25.7
Goods stored abroad or shipped between foreign countries.....	—	2.2	5.3	12.1	18.9	25.5	36.1	30.4
Dollar exchange.....	2.8	2.5	3.4	2.6	3.0	4.4	3.3	3.2
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^a Data for the years 1924-30 are taken from *Facts and Figures Relating to the American Money Market*, American Acceptance Council, 1931, pp. 44-45, and those for 1931 from *Federal Reserve Bulletin*, 1932, Vol. 18, p. 128. Figures in each case are for the end of the year.

reason why they need be encouraged by preferential treatment as compared with direct loans. Nor is it clear that there is any sound basis for a discrimination in this respect in favor of the banks of countries which are financially weak as against those which are financially strong.

The other groups which have the least claim to favored treatment, in accordance with the general theories

advanced in the propaganda for acceptances, are those based on goods stored abroad or shipped between foreign countries, and those based on domestic warehouse receipts.¹⁴ However desirable it may be to encourage the holding of staple goods in warehouses for the sake of "orderly marketing," and however great the ultimate safety of loans made in this connection, it cannot be claimed that such credits are directly self-liquidating. They do not arise out of completed transactions; they are a means of furnishing more or less permanent working capital; and they are held likely to have a speculative character. Nor is it as easy for the buyer of such an acceptance to check up on the value of the collateral or to protect himself in case of default as is the case in financing on "salt water" bills, in which the time of the credit corresponds to the time necessary for carrying through the trade transaction.

It will be noticed that these three doubtful items—domestic warehouse credits, dollar exchange, and goods stored abroad or shipped between foreign countries—which in 1925 made up only about 22 per cent of the total, had increased in 1929 to 46 per cent, and in 1930 to 59 per cent. Bills based on goods stored or shipped between foreign countries have been increasing especially rapidly since 1927, and by 1930 exceeded in volume those issued either in import or in export trade. However little importance one may attach to the self-liquidating character of paper—a point which we shall

¹⁴ In this analysis it is assumed that the bulk of the acceptances which make up the category of "stored abroad or shipped between foreign countries" are issued against goods in storage awaiting sale rather than goods which are in transit between buyer and seller. The rapid growth of this class of acceptances supports the assumption, though it does not prove it.

discuss in Chapter XVII—it can hardly be denied that the case for special favors to the acceptance market as against the commercial paper market is seriously weakened by the expansion of these elements in the acceptance market to one-half the total.

Moreover, the distinctive character of the other half of the acceptances is also being nibbled away. The law provides that a bill to be eligible for acceptance by a national bank as based on a shipment of goods in domestic trade, must be accompanied by shipping documents. In the earlier rulings this provision was held to mean that the purpose of the bill should be to finance shipment and not to enable a buyer to carry goods through the process of manufacture and resale after they had been delivered to him. Hence it was required that the life of the bill should have some reasonable relationship to the length of time required for shipment, and that the acceptance should not be used as a means of furnishing working capital to the buyer. But in a ruling of November 8, 1929,¹⁵ it was held that a buyer may, after paying a sight draft at a bank, and before the bank has turned over to him the shipping documents which accompanied it, draw a 90-day draft on that bank, have the acceptance discounted, and walk out with the shipping documents. So far as indicated, he may do this even though the goods have already arrived and are awaiting release of the shipping documents for delivery. Thus the provisions of the law which were designed to link up acceptance with actual shipment are completely nullified.¹⁶ In connection with this ruling the

¹⁵ *Federal Reserve Bulletin*, 1929, Vol. 15, p. 811.

¹⁶ "Under the facts stated the accepting bank has possession of the bill of lading at the time of the acceptance of the draft drawn upon it, and this is believed to be a substantial compliance with the requirement

Board expressly called attention to the fact that it reversed the earlier rulings intended to prevent the use

PERCENTAGE DISTRIBUTION OF BANKERS' ACCEPTANCES OUTSTANDING^a

Date	Held by Federal Reserve Banks			Held by Others
	Total	For Own Account	For Foreign Correspondents	
1927:				
June 30.	45.8	26.3	19.5	54.2
Dec. 31.	57.3	36.1	21.2	42.7
1928:				
June 30.	51.1	21.1	30.0	48.9
Dec. 31.	63.3	38.0	25.3	36.7
1929:				
June 30.	45.2	7.2	38.0	54.8
Dec. 31.	54.2	22.6	31.6	45.8
1930:				
June 30.	45.7	9.7	36.0	54.3
Dec. 31.	49.3	21.1	28.2	50.7
1931:				
June 30.	31.8	6.9	24.9	68.2
Dec. 31.	57.1	31.4	25.7	42.9

^a *Facts and Figures Relating to the American Money Market*, p. 61; *Federal Reserve Bulletin*, 1932, Vol. 18, p. 105.

of the acceptance as a means of obtaining working capital. It is difficult to see wherein this ruling leaves any rational ground for preferential treatment of the trade acceptance over the single-name promissory note.¹⁷

Reserve Bank buying rates on acceptances have usually been such as to attract to the Reserve Banks a very large fraction of the outstanding bills. The most important question in connection with the Reserve Banks'

of the law that shipping documents conveying or securing title be attached at the time of acceptance." (*Ibid.*)

¹⁷ It may be added that though it was anticipated that the ruling of November 1929 would lead to an expansion of the use of acceptances in domestic trade, these expectations up to date have not been fulfilled. Compare p. 247.

policy toward the acceptance market arises in connection with the fixing of the rate. At most times the acceptance market in this country has depended for its very existence on the amount of favor shown it by the Reserve Banks. The table on page 258 shows how heavily the bill market has leaned on the Federal Reserve system.

The fact that the Reserve Banks stand ready to buy acceptances at a rate lower than the rediscount rate on commercial paper has been defended on the ground that the acceptance is a better security than rediscounted paper since it always bears the names of two banks,¹⁸ and since no question of renewal of obligation arises in connection with it, such as may arise with promissory notes. This point is, of course, theoretically sound, but in practice it is probably of no significance.¹⁹

The real point is that there has never been an independent demand for acceptances at rates which would call forth a sufficient volume of them to make a satisfactory market. Consequently, in order to encourage the use of acceptances, besides endorsing them for foreign buyers in the way already noted, the Reserve Banks have always bought a very large proportion for their own account.

A campaign to create a discount market in this country, however, can hardly be considered successful so long as the market requires constant nursing on the part of the Reserve Banks.²⁰ Especially is this true so long

¹⁸ Testimony of Governor Strong, Hearings on H.R. 7895, Part 1, pp. 457-58.

¹⁹ Up to 1926 the Federal Reserve Bank of New York had never taken any loss on rediscounted paper. (*Ibid.*, p. 543.)

²⁰ There is a difference of opinion among Reserve Bank officials as to the extent to which the market for acceptances should be regarded as artificial (in the sense that it is determined by the Reserve Banks or

as the commercial banks do not regard acceptances as attractive investments. There are no data as to holdings of banks, except for the banks of the New York District and for the accepting banks, which are in general the very large city banks. As the accompanying table shows, the member banks of the New York District have as a rule held very moderate amounts of acceptances. Moreover, more than half of these are bills which have been accepted by the same bank which holds them. Such "acceptances" hardly qualify as essentially different from simple advances over the counter. The Reserve Banks, other than New York, nearly all report that banks of their districts are not interested in buying acceptances, chiefly because the rates are unattractive.²¹ In 1930 and 1931 the market for acceptances was greatly strengthened by the shortage of commercial paper and by the general attempt of banks, and for that matter of individuals, to get their assets into highly liquid short-term form. The situation was so abnormal that it would not be safe to conclude that the acceptance has made a permanent place for itself of any such magnitude as the recent figures indicate.

From the standpoint of the buyer the acceptance must make its place in competition with two other types of instrument which offer the same combination of great

buying rates rather than by any spontaneous demand). To a question on this point the Philadelphia Bank reported (in 1931) that the market is highly artificial, the Reserve buying rate "practically" determining the market rate. Chicago, Dallas, and Boston reported that this has been true at times, and San Francisco "more than has been necessary during recent years." The Kansas City, New York, and Cleveland Banks reported that the market is not artificial, and Boston reported that "it appears that the open market rate on acceptances is not so artificial as might be supposed from the fact that the Federal Reserve Banks furnish the principal market." (Hearings on S. res. 71, Part 6, pp. 879-81.)

²¹ *Ibid.*, pp. 850-51.

ACCEPTANCES HELD BY MEMBER BANKS IN THE NEW YORK FEDERAL RESERVE DISTRICT, 1925-30^a

Date	Total		Own Acceptances		Acceptances of Others	
	In Millions of Dollars	<i>As Percentage of all Loans and Investments</i>	In Millions of Dollars	<i>As Percentage of all Loans and Investments</i>	In Millions of Dollars	<i>As Percentage of all Loans and Investments</i>
1925:						
June 30	64	0.73	36	0.41	28	0.32
Dec. 31	47	0.51	23	0.25	24	0.26
1926:						
June 30	25	0.27	13	0.14	12	0.13
Dec. 31	29	0.30	15	0.16	14	0.14
1927:						
June 30	39	0.39	11	0.11	28	0.28
Dec. 31	53	0.49	38	0.35	15	0.14
1928:						
June 30	28	0.25	8	0.07	20	0.18
Dec. 31	19	0.17	9	0.08	10	0.09
1929:						
June 30	25	0.21	16	0.13	9	0.08
Dec. 31	94	0.76	39	0.32	55	0.44
1930:						
June 30	132	1.07	42	0.34	90	0.73
Dec. 31	185	1.54	51	0.42	134	1.12

^a Data on acceptance holdings from Hearings on S. res. 71, Part 6, p. 872; on total loans and investments from *Annual Report of the Federal Reserve Board*, 1930, p. 172.

safety and high liquidity,²² namely the Treasury certificate and the stock market call loan. The great mass of short-term United States government securities are

²² Liquidity from the standpoint of the individual bank, not of the system as a whole. Compare p. 276.

fully tax exempt in the hands of banks and have the added advantage that the subscriber ordinarily is enabled to retain the funds for some time as a government deposit at a rate lower than is yielded by the certificates. Since such securities have as good a market as have the acceptances, the yield on acceptances would have to be substantially higher to make them equally attractive to the banks. As a result of Federal Reserve policy, however, the yield of acceptances has rarely gone above that of United States government securities by more than one-half of one per cent; the usual spread is about three-eighths. Except in times of very easy money, call loans yield a higher return than do other types of secondary reserve and the risk on them has so far proved to be negligible.

On the other hand, if rates were set higher so as to make the acceptances more attractive to banks and other investors, the supply of acceptances would probably dry up. The root difficulty seems to be that the commission charged by the accepting bank, plus the dealer's profit, make such a wide spread between the cost to the borrower and the yield to the buyer that the acceptance market is less economical for most borrowers and less profitable for lenders than are other types of financing. For without a rate differential the acceptance market would not be a particularly attractive method of borrowing for firms which have access to other forms of open market short-term credit. To borrow through the use of acceptances involves more work and red tape and involves closer scrutiny of the details of one's business on the part of lenders.

We conclude that in the financing of international trade in readily salable commodities, the acceptance

probably has a real field of usefulness, in which it could stand on its own feet without official assistance. But nothing has been gained by forcing the acceptance form of credit into uses in which it cannot compete on its own merits. And so far as the one original purpose is concerned, namely that of making a fluid market through the medium of which funds could readily be shifted from one part of the country to another as demand and supply of credit shift—the acceptance market has been a failure. It was not needed for that purpose and has not served that purpose.

CHAPTER XIII

LIQUIDITY OF COMMERCIAL BANK ASSETS ELIGIBILITY FOR REDISCOUNT

It was hoped by some critics of our pre-war banking organization that the Federal Reserve system would bring about a change in the standards of commercial bank lending. Since it was anticipated that commercial banks would have to look to the Federal Reserve system for credit in order to meet the demands of their customers for currency, it was naturally supposed that the types of paper which were made eligible for rediscount or for purchase would be favored by the banks and would grow in use at the expense of the types which might be discriminated against. Standards of eligibility would tend to become standards of lending practice.

The special importance attached to the concept of eligibility arose from the fact that the lending practices of American banks did not meet with the approval of most students of banking theory.¹ The banking assets of the country consisted in large part of loans and investments which were not of self-liquidating character. This mass of unliquid credit included much paper which was not even nominally self-liquidating, such as bonds, security collateral loans, and real estate mortgages; and also a vast number of single-name promissory notes of farmers and business men which were nominally short-dated but actually represented permanent working capital or fixed investment.²

¹ The justification of this attitude is considered in Chap. XVII.

² Compare H. G. Moulton, "Commercial Banks and Capital Formation," *Journal of Political Economy*, Vol. 26, 1918, pp. 484-508, 638-63, 705-31, 849-71.

There was much paper which was highly liquid in the sense that it would be paid off in the normal course of trade, but paper of this type was not distinguished in form from that which represented permanent business capital. The only documentary evidence of liquidity which ever accompanied such notes was the financial statement of the borrower. Such statements were commonly required by large city banks, and by smaller banks in the case of paper purchased in the open market, but they were not generally required of local customers in smaller communities, and were almost unknown in connection with farmers' loans.

It was hoped that the eligibility standards of the new system would do two things; first, increase the proportion of commercial paper in the assets of the banks as compared with bonds and call loans; and, second, exert a beneficial influence on the actual liquidity of the paper which was nominally commercial in character. By excluding from rediscount all security loans to customers except those secured by United States government bonds (which then existed in very small volume), the law gave a preferential status to paper which was nominally short-time over what was admittedly of investment character. If the Reserve administration was to do anything further to reform the banking practice, its task was first to make eligibility valuable, and second, by eligibility restrictions, to increase the actual liquidity of the paper which was nominally of short-time character. The responsibility of fostering a more liquid type of loans was accepted by the Reserve Board, and it has been a factor of some importance in credit policy, especially in the earlier period of the System's history, though never of dominating influence.

There were open to the Reserve authorities two ways in which credit policy might be used to influence the character of the assets of the member banks. The first step, and an essential one, was the issuance of eligibility regulations which would put a premium on paper which was actually liquid over that which was only nominally short-time. The second possible line of attack would have been the adoption of policies which would tend to increase the amount of rediscounting which the banks would have to do, thereby making it advantageous for them to keep their assets in the form of eligible commercial paper, rather than in ineligible investments and collateral loans. As we shall see, only the first of these methods was actually utilized.

An effort was made at the outset to establish a very strict standard of eligibility for rediscounted paper. This was done by requiring that every note presented for rediscount should bear on its face evidence that it grew out of a specific commercial transaction, or else bear a stamp certifying that the borrower had filed with the rediscounting bank a sworn financial statement which indicated that he possessed enough quick assets to make his short-time borrowing truly liquid.³

If this policy had prevailed permanently so that paper bearing no evidence of liquidity was excluded from Reserve Bank portfolios, it is probable that the standards of commercial banking would to some extent have been modified in the direction hoped for, even though, as we show later, rediscounting has turned out to be of less importance than was anticipated. The immediate effect of the attempt to enforce these stand-

³ *Federal Reserve Board Circular No. 13*, Nov. 10, 1914; reprinted in H. Parker Willis, *The Federal Reserve System*, p. 930.

ards, however, was to arouse a great storm of protest and, as it appeared, to keep the Reserve Banks from getting any considerable amount of business.

The protests centered on the technical difficulties involved in securing the type of credit statement demanded, but a more serious difficulty was the discrepancy between the Board's standards and the current practice of the country. It might have been possible to teach farmers and small-town business men to prepare financial statements, but such statements would only have made evident the inescapable difficulty of getting self-liquidating paper in communities where the banks' principal customers were accustomed to look to the banks for a considerable share of their permanent capital.

Rediscounts at the end of the year 1914 amounted to only \$9,900,000. This low figure was regarded as evidence of failure of the Board's policy, but it is doubtful whether there would have been much rediscounting even if standards had been more liberal. Business had been depressed all through the year 1914, and especially so after the beginning of the World War. The lowering of reserve requirements had left a good deal of slack in the System, so that it was easy for banks which were short of reserves to get aid from other banks if rediscounting with the Reserve system was less convenient. The old system of correspondent relations, which the city banks were naturally anxious to keep alive, provided a convenient means of borrowing for the country banks.

The protests were so vigorous that the Reserve Board quickly withdrew from its position, and, early in 1915, waived the requirements of a credit statement except

in the case of notes of \$2,500 or more.⁴ The effect of this concession was practically to confine the requirement of a statement to open market commercial paper

LOANS AND INVESTMENTS OF ALL MEMBER BANKS, 1925-31^a

I. In Millions of Dollars

Class	1925	1926	1927	1928	1929	1930	1931
Loans on securities...	6,718	7,321	8,156	9,068	10,094	10,656	8,334
Loans on real estate..	2,338	2,650	2,926	3,068	3,164	3,155	3,218
Securities investments.	8,863	9,123	9,818	10,758	10,052	10,442	12,106
Miscellaneous loans.....	11,599	12,090	11,856	12,167	12,401	11,403	10,265
Total loans and investments.....	29,518	31,184	32,756	35,061	35,711	35,656	33,923

II. As a Percentage of Total

Loans on securities...	22.8	23.5	24.9	25.9	28.3	29.9	24.6
Loans on real estate..	7.9	8.5	8.9	8.7	8.9	8.8	9.5
Securities investments.	30.0	29.2	30.0	30.7	28.1	29.3	35.7
Miscellaneous loans.....	39.3	38.8	36.2	34.7	34.7	32.0	30.2
Total loans and investments.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^a Data compiled from *Annual Reports of the Federal Reserve Board*, 1928, p. 118; 1930, p. 93; *Federal Reserve Bulletin*, 1932, Vol. 18, p. 14. Figures in each case are for June 30. Data for earlier years are not available.

and to over-the-counter loans of large city banks. As has been noted, these were the loans which already were normally based on financial statements.

⁴ This limit has since been raised to \$5,000.

The abandonment of the campaign for financial statements was a decisive defeat for the advocates of more rigid standards of technical liquidity in commercial bank lending, and little effort has been made since to substitute other methods of controlling liquidity. The importance of the incident can easily be exaggerated, however. Much more important is the policy of extending credit by buying securities and lending on collateral security, which has made the standards of eligibility relatively unimportant.

During the last decade there has been a great increase in the proportion of security loans in the holdings of the member banks. The table on page 268 indicates clearly how completely shattered have been the hopes of those reformers who 20 years ago looked forward to a revival of the ancient tradition that banks' earning assets should consist chiefly of short-term commercial paper.

The increased volume of securities carried on bank credit reflects a corresponding change in the methods of American corporation finance. The increase in speculative call loans, to which so much attention has been given in the last few years, directly accounts for only a small fraction of the increase in the proportion of bank lending which is done on the basis of security collateral.⁵ Banks have been compelled to take on the character of investment institutions because they have been experiencing a diminishing demand for their services as makers of short-term business loans.

⁵ Data bearing directly on this question are available only for call dates beginning with Oct. 3, 1928. Brokers' loans at the end of 1930 made up 4.3 per cent of the total loans and investments of member banks; at the end of 1931, 1.1 per cent. The peak figure at the end of 1928 was 7.2 per cent. The ratio of loans to brokers to all loans has ranged from 9 to 14 per cent.

The accompanying table shows the increasing use of securities, and especially of common stock, as reflected in the balance sheets of 22 of the country's leading industrial corporations.

PERCENTAGE DISTRIBUTION OF CAPITAL OF 22 LEADING INDUSTRIAL CORPORATIONS^a

Capital Item	1918	1924	1930
Common stock and surplus.....	56.0	59.6	73.1
Preferred stock.....	14.4	17.4	13.5
Bonds and notes.....	13.2	13.7	6.5
Current debt.....	16.4	9.3	6.9

^a Computed from *Poor's* and *Moody's Manuals of Industrials*.

The relative decline in "miscellaneous loans" (which is generally interpreted as being substantially equivalent to borrowings to finance the short-time needs of business) has been motivated in part from the side of the lenders and in part from that of the borrowers. On the one hand, from 1922 until 1930 the condition of the investment market favored long-time financing. We had a sellers' market first for bond issues and later for common stock issues. Concerns which have been able to sell their stocks on a 3 per cent basis have naturally been encouraged to obtain capital in this way to pay off their bank loans. On the other hand, business men have undoubtedly been influenced to refund their short-time obligations into stocks and bonds by a recollection of the widespread distress which prevailed in 1920 and 1921 because of the inability of business men to take care of maturing bank loans. So many businesses passed into the control of bankers at that time that a tradition was created in favor of securing working capital through stock issues—just as the great number of busi-

ness failures which resulted in the nineties from inability to pay interest and principal of bonded debt created a bias in favor of short-time financing.

The official position of the Reserve system has been mildly hostile to the increase of investments and collateral loans on the part of the banks. However, the development has received surprisingly little attention in official literature. In its annual report for 1928, among other reasons for its policy of forcing member banks to withdraw their funds from the stock market, the Reserve Board cited the increasing proportion of security investments and security loans among the assets of the banks.

In recent years the most rapid expansion of bank credit has been in the direction of increasing use of bank funds in investments and in loans on securities. Between the middle of 1925 and the middle of 1928 member bank holdings of investments increased from \$8,863,000,000 to \$10,758,000,000 and their loans on securities from \$6,718,000,000 to \$9,068,000,000. At the present time, of the total volume of nearly \$35,700,000,000 of loans and investments of member banks, more than 57 per cent are either in investments or in loans on securities. Securities thus underlie considerably more than half of the outstanding volume of member bank credit. The proportion of bank credit that is based on securities has been rapidly increasing.⁶

This was all that was said on the subject. There was no discussion of the question whether the increased proportion of bank credit based on securities was out of line with the increased proportion of commercial and industrial financing that was being done through security issuance, nor any citation of the advantages and disadvantages of such a tendency. The upward trend of the

⁶ P. 8.

proportion of such credit to total bank credit had been evident for years and had apparently aroused no concern.⁷ Now the proportion is still higher⁸ but the change seems no longer to arouse misgivings.

Aside from the statement quoted above, I have noted in the official pronouncements of the Federal Reserve system no direct reference to the increasing absorption of bank funds in security investments and security loans. There are statements of principle which might imply hostility to a development in this direction,⁹ but except in connection with the attack on the stock market boom in 1928-29, these principles are not linked with policy.

The growth of the practice of financing investment through the use of bank funds has been facilitated by Federal Reserve practice both with regard to open market purchases and with regard to collateral loans. Open market investments put funds into the possession of the banks without giving the Reserve system any direct control over the use made of them by the member banks. If credit is extended chiefly by rediscounting it is necessary for banks to put their funds into use in ways

⁷ For reporting member banks the proportion of security loans and investments to total loans and investments was as follows in successive Januaries: 1922, 49.1 per cent; 1923, 54.7 per cent; 1924, 52.6 per cent; 1925, 56.0 per cent; 1926, 57.4 per cent; 1927, 57.0 per cent; 1928, 60.4 per cent; 1929, 60.6 per cent; and 1930, 60.0 per cent. (Computed from *Annual Report of the Federal Reserve Board*, 1930, p. 98.)

⁸ For reporting member banks the ratio was 64.4 per cent on December 30, 1931.

⁹ For example: "This is a development which, though it may in some cases result in strengthening the position of individual member banks, represents a departure from the original conception of the Federal Reserve Banking system as of a co-operative undertaking among commercial banks engaged primarily in the financing of the current operations of productive industry and trade." (*Ibid.*, 1926, p. 10.)

which give rise to eligible paper. This is the prime objection to the open market operations, from the standpoint of those who deplore recent tendencies in the lending policy of the banks. Their expansion bears no necessary relationship to the volume of business done in ways which give rise to eligible paper. The extent to which open market purchases of government securities have created the credit base during the past ten years was indicated on pages 28-29.

In addition, since 1917 the member banks have been permitted to borrow on their collateral loans, secured by government obligations, and this type of borrowing has become much more popular than the rediscount of eligible paper. The proportion of member bank borrowings at the Federal Reserve Banks which is secured by United States government bonds and notes is indicated in the accompanying table.¹⁰

December 31	Percentage
1922	53
1923	48
1924	59
1925	60
1926	57
1927	72
1928	62
1929	56
1930	35
1931	50

The preference is not due to the relative scarcity of eligible paper. The total amount of eligible paper was

¹⁰ Computed from data in *Annual Reports of the Federal Reserve Board*, and (for 1931) in the *Federal Reserve Bulletin*, 1932, Vol. 18, p. 68.

estimated by the Federal Reserve Board at 2,996 million dollars as of September 29, 1931, of which amount less than 300 million dollars was actually rediscounted.¹¹ If the eligible paper were evenly distributed, or if it could readily be redistributed through the open market, there would never have been any question of a shortage of eligible paper.¹² Far more important in determining the way in which member banks borrow is the matter of convenience and economy in handling. Eligible paper must be sorted out and certified by the rediscounting bank; scrutinized by rediscounting officers; and withdrawn and replaced by other paper as it matures. Col-

¹¹ The combined total of rediscounts and borrowings on collateral was 323 million dollars.

¹² The situation which arose in the winter of 1931-32, and which led to the passage of the Glass-Steagall Act, may seem to disprove this statement. But member banks were not suffering from lack of borrowing capacity. The trouble was that on account of the slack state of business and the high level of open market purchases of government securities, banks were borrowing to only a moderate extent, while at the same time the demand for currency was abnormally high on account of the widespread hoarding movement. Consequently the volume of member banks' notes and of rediscounted paper in Reserve Banks' hands was unusually low in proportion to the volume of their outstanding credit. This meant that Federal Reserve notes had to be backed by gold (since securities bought in the open market could not be used as backing for circulation). Under the conditions which had maintained for ten years this would have made little difference since there was an abundance of gold for the purpose. But the heavy gold withdrawals of the autumn of 1931, together with the domestic hoarding movement, had cut down the supply of free gold and there was real danger that further withdrawals, especially on the part of France, might result in embarrassment for the Reserve Banks. The situation could have been remedied by selling out a few hundred million dollars worth of government securities, thereby forcing the member banks to rediscount or borrow on collateral, but because of our unfortunate tradition against inter-bank borrowing this procedure would have interfered with the Banks' purpose of encouraging in every way an expansion of bank credit and thereby stimulating business. Hence, it was deemed advisable to liberalize the provision governing the issuance of notes by permitting the use of government securities on equal terms with member bank notes as backing for circulation.

lateral loans against securities can be made with much less formality. Some banks keep their government securities permanently in the custody of the Reserve Bank and simply telephone or telegraph when they wish to borrow against them. Loans of this type require no credit analysis and involve the minimum amount of replacement of collateral.

These two practices, open market purchase and collateral lending, greatly simplify the task of Reserve Bank administration. If it is assumed that the significance of Reserve policy is in its effect on the volume of outstanding credit,¹³ they are more effective than is the rediscounting of commercial paper. On the other hand, if it is assumed that the Reserve Banks have a responsibility for the credit situation on its qualitative side, meaning by this the kind of instruments used by the banks as a basis of credit extension, collateral loans and security purchases are bad practice. So long as banks can obtain ample credit by the use of government paper, using it as collateral for short borrowings or selling it out if their needs are likely to be of longer duration, there is little pressure on the banks to revise their lending practice along the lines suggested by the regulations governing eligibility.

The drift of the commercial banks toward the status of investment trusts has been an indirect consequence of certain Federal Reserve policies. The fact that the bulk of the credit extended has taken the forms of open market purchases of government securities and collateral loans on government securities has made it unnecessary for the banks to hold eligible commercial paper. True, the Reserve Banks have not made, and under the

¹³ Compare pp. 124-28.

Federal Reserve Act could not make, loans to members on the collateral of industrial securities; and it is industrial, rather than government, securities which have become increasingly the basis of the banks' lending and investing operations. Therefore, looking at the matter from the standpoint of an individual bank it might appear that the Reserve system policies in question have had no influence on the volume of industrial securities bought or accepted as collateral. If a bank could not borrow on its government bonds it might have to sell them and buy commercial paper, but that would not necessarily affect the amount of industrial and real estate bonds in its portfolio.

But from the standpoint of the banking system as a whole the case looks very different. If the member banks of the Federal Reserve system had to hold a greatly increased amount of commercial paper, they could get it only by pursuing policies which would encourage business men to borrow on short-term liquid paper instead of issuing so many long-term securities. The supply of commercial paper could be increased readily if there were any inducement for the banks to give it preference over other methods of extending credit. As this took place the growth of the supply of investment instruments would be correspondingly checked. Government paper would be forced out of the portfolios of the banks only to the extent that a falling off in the issuance of industrial securities created a private investors' market for the government paper.

However, the discrepancy between the Reserve system's nominal standards and the actual loan and investment policies of the banks is due only in part to the facility with which the banks can borrow on the security

of government obligations. To a larger extent it has been due to the open market operations, which give the member banks the use of credit without giving the Reserve Banks any control over the use which is made of them by the member banks.

In summary, questions regarding the eligibility of specific types of paper for rediscount, though they have received a great deal of attention from the Federal Reserve Board, are of distinctly minor importance. From the standpoint of Reserve system control of the quantity of credit extended, detailed restrictions on eligibility will be of no consequence so long as member banks are allowed to borrow on their collateral notes, and so long as Federal Reserve Banks continue to pursue a liberal open market policy. And, from the standpoint of qualitative control, eligibility restrictions can have no great significance so long as member banks are under no pressure to rediscount.

CHAPTER XIV

THE FEDERAL RESERVE SYSTEM AND THE TREASURY

It is a generally accepted principle of modern central banking theory that central banks should be free from the control of the treasuries of the countries which they serve. It is the function of a central banking system to maintain a sound credit situation, and that objective is bound to conflict to a certain extent with the interest of the treasury in borrowing as cheaply, and at times as extensively, as it can. In this respect the situation of a treasury differs from that of other borrowers only in respect to power.

Compliance with the desire of national treasuries for cheap money having been the source of most of the recent disastrous inflations, the charters of the central banks which have been founded during the stabilization era have as a rule contained elaborate provisions designed to maintain the independence of the banks from government, and especially from treasury, control.¹ I believe that this is a sound principle, but one which is certain in practice to be forgotten when war or other public emergency makes it necessary for treasuries to mobilize resources quickly.

At the time of the creation of the Federal Reserve system, comparatively little attention was given to the question of proper relations between the System and the

¹ The influence actually exercised by finance ministries did not diminish as much as was anticipated, however, and under the strains which developed in 1931 the so-called independence of central banks almost entirely vanished.

United States Treasury. Federal government borrowing was of minor importance, and it was not anticipated that the Treasury as a borrower would have an important interest in the credit policies pursued by the Reserve system. Inclusion of the Secretary of the Treasury in the membership of the Board was suggested by the fact that the Treasury was expected to be a heavy depositor in the Reserve Banks, and also by the fact that the Treasury for many years had been exercising some of the functions of a central bank, putting funds into the market in times of seasonal strain or of crisis, and holding them idle as a reserve in ordinary periods.

The World War changed this situation completely. Credit policy, like every other field of public administration, became an instrument of warfare. Not only was the pyramid of bank credit expanded to facilitate war finance, but discount rates were kept low, Liberty Bond paper was given preferential treatment at the Reserve Banks, and member banks were encouraged to load themselves with government obligations and with customers' paper secured by such obligations. Protests of Reserve Board members were met by intimations that unless Reserve authorities were willing to play the part assigned to them the Treasury would have to take over direct control of the Reserve system.² Not until January 1920 was the Reserve Board formally free to shape its policies in accordance with commercial, agricultural, and industrial, rather than fiscal, necessities.

That this situation existed is not disputed. Critics of the System and apologists alike place the responsibility for policies pursued during the war and early post-war

² H. Parker Willis, *The Federal Reserve System*, pp. 1204-05.

years on the Treasury rather than on the Board or on the management of the Reserve Banks.³

The situation during the years since 1919, however, is not so clear. It is obvious that discount policies have no longer been dominated by the exigencies of Treasury financing to anything like the extent that maintained during the war. Whether the System has been entirely free in its credit policies from Treasury interest in cheap money is a much more difficult question. It cannot be settled by examination of statistical and historical data, since only actions, not motives, are matters of record. All that we can do is to examine the public utterances of responsible public officials and others in a position to have an intelligent opinion concerning the motives back of Reserve system policy, and compare these utterances with the record of actual Treasury and Reserve Bank transactions. Moreover, Reserve officials in their public utterances have naturally been reticent on the question of Treasury domination of their policies. Our conclusion must be based more on the records of actual practice than on statements of policy.

In the hearings on the Strong bill, Adolph C. Miller, the senior member of the Federal Reserve Board, said: "There is a constant disposition not to work at cross purposes, but to let the Treasury's program, whenever it is practicable, work in with the Federal Reserve's." Standing alone this statement might possibly be interpreted as an avowal of purpose to use the Reserve Banks as a means of manipulating the market to favor the Treasury's program. In its context, however, it seems to mean

³ Compare W. P. G. Harding, *Formative Period of the Federal Reserve System*, p. 148; *Report of the Joint Commission on Agricultural Credit*, 1921, Part II, p. 44.

rather the converse, namely, that the Treasury's operations are timed so as to support the program of the Reserve system.

At the hearings held by the Senate Committee on Banking and Currency in 1931, Governor Harrison was asked concerning the influence of the Treasury on Federal Reserve policy and testified as follows:

The Chairman [Senator Glass]. Let me ask you one question right here. Does the Treasury undertake to influence the action of the New York Bank, or any other Federal Reserve Bank, in transactions of that sort [open market operations in government securities]?

Governor Harrison. Never, now.

The Chairman. I know it did when I was Secretary of the Treasury.⁴

Governor Harrison. That is the reason I said "now."

The Chairman. And I thought it was a pretty vicious thing to do and was only done under war necessities, or immediate post-war necessities rather, and I wondered whether it were continued or not.

Governor Harrison. I think there was a time when as a result of the pressure of war necessity the interest of the Treasury was a very strong factor in certain Federal Reserve policies. I think that was really not a matter of very severe criticism in the circumstances, but in recent years, and since that period has terminated, there has never been any effort on the part of any of the Treasury officials that I know of, as far as the Federal Reserve Bank of New York is concerned, to influence our rate policies or our operations in government securities.⁵

It has been stated repeatedly by H. Parker Willis, whose background of experience as the first secretary of the Federal Reserve Board gives his statements especial interest, that the practice has been for the Reserve au-

⁴ Senator Glass was Secretary of the Treasury in 1919.

⁵ 71 Cong. 3 sess., *Operations of the National and Federal Reserve Banking Systems*, Hearings on S. res. 71, Part 1, pp. 98-99.

thorities to shape their credit policies more or less continuously with a view to helping the Treasury to carry through its borrowing operations.⁶ It is of interest therefore to compare the record of the Federal Reserve rediscount and open market operations with the record of the more important financial operations of the Treasury in order to see whether the facts support this charge.

Since 1920 changes in rediscount rates do not appear to have been timed so as to facilitate Treasury borrowing. Let us examine first the record of the long-time borrowings from January 1, 1922 to September 15, 1931. The accompanying table shows the dates and amounts of the issues of more than five years' maturity, and the rediscount rates which were charged at New York at the time the bonds were issued.

NEW YORK REDISCOUNT RATE AT TIME OF LONG-TERM TREASURY
BORROWINGS, 1922-31

Date	Borrowings			Rediscount Rate (Per cent)
	Amount (In millions of dollars)	Maturity (In years)	Yield (Per cent)	
Oct. 16, 1922....	764	25-30	4.250	4
Dec. 15, 1924....	757	20-30	4.000	3
Mar. 15, 1925....	290	20-30	3.940	3½
Mar. 15, 1926....	495	20-30	3.710	4
June 15, 1927....	495	16-20	3.360	4
July 16, 1928....	359	12-15	3.375	4½
Mar. 16, 1931....	594	10-12	3.375	2
June 15, 1931....	821	15-18	3.125	1½
Sept. 15, 1931....	800	20-24	3.000	1½

⁶ For instance: "... there has been steady tinkering on the part of the Treasury Department with the discount rate, in the effort to keep it low, and hence to facilitate the floating of new Treasury obligations, while there has been equally steady effort on the part of the Treasury to control and direct the actual policy of Reserve Banks." H. P. Willis and B. H. Beckhart, *Foreign Banking Systems*, p. 15.

At the time of the first issue, in October 1922, the New York discount rate had been unchanged for nearly four months, and it remained at 4 per cent until February 23, 1923. The second issue was brought out in part on December 15, 1924, when the rediscount rate had stood at 3 per cent for over four months. The remainder of this series was brought out on March 15, 1925, just two weeks after the rate had been advanced from 3 to $3\frac{1}{2}$ per cent. The issue of March 15, 1926 was brought out less than a month before a one-half per cent reduction in the rediscount rate, and that of 1927 came out about six weeks before a similar reduction. The issue of 1928 furnishes the most plausible basis for the charge that rate changes were timed to aid Treasury needs. The subscriptions were closed on July 7 and the rediscount rate was advanced to 5 per cent on July 13, three days before the bonds were actually floated. The issues of 1931 came in periods of very low rediscount rates, but the case for low rates in terms of the business situation was so strong that it is hardly likely rates would have been higher in the absence of any consideration of fiscal needs.

In summary, leaving out the three issues of 1931, one issue was brought out just before a rate advance; one just after a rate advance; two came just before rates were lowered; and in two cases there was no rate change at a date near that of the issue. This record certainly creates no presumption that the Treasury has controlled the rates in its own interest.

The record of short-term note issues likewise gives no indication of a policy of lowering rates at the particular times when they are being floated. The record of issues is shown in the table on the following page.

ISSUES OF TREASURY NOTES^a

Date	Amount (In millions of dollars)	Yield	Maturity
Feb. 1, 1922....	602	4 $\frac{3}{4}$	3 yrs. 1 $\frac{1}{2}$ mo.
Mar. 15, 1922....	618	4 $\frac{3}{4}$	4 yrs.
June 15, 1922....	660	4 $\frac{3}{8}$	3 yrs. 6 mo.
Aug. 1, 1922....	487	4 $\frac{1}{4}$	4 yrs. $\frac{1}{2}$ mo.
Dec. 15, 1922....	469	4 $\frac{1}{2}$	2 yrs. 6 mo.
Jan. 15, 1923....	367	4 $\frac{1}{2}$	4 yrs. 11 mo.
May 15, 1923....	1,336	4 $\frac{3}{4}$	3 yrs. 10 mo.
Mar. 15, 1927....	1,360	3 $\frac{1}{2}$	3-5 yrs.
Sept. 15, 1927....	619	3 $\frac{1}{2}$ ^b	3-5 yrs.
Jan. 16, 1928....	607	3 $\frac{1}{2}$	3-5 yrs.

^a Data are from *Annual Reports of the Secretary of the Treasury on the State of the Finances*.

^b Coupon yield; 369 million dollars of this issue was exchanged at 100 $\frac{1}{8}$ for maturing 4 $\frac{1}{4}$ per cent Liberty bonds on which interest was prepaid for two months.

Occasionally there have been cases when the sequence of events was such as to support such interpretation; at other times precisely the opposite relationship appeared. In 1922 the rediscount rate at New York stood at 4 $\frac{1}{2}$ per cent from January till June 22; for the rest of the year and for the first six weeks of 1923 it was 4 per cent. During the 4 $\frac{1}{2}$ per cent period a billion and a half of three-to-four year notes were issued, and during the 4 per cent period, a little over a billion and a quarter. A 4 $\frac{1}{2}$ per cent rediscount rate was maintained at New York from February 23, 1923 to May 1, 1924, during which period about \$668,000,000 was borrowed on short notes. During the period from May 1, 1924 to February 27, 1925, when rates were being progressively lowered, no notes were issued. In the remaining ten months of 1925, with New York rediscount rates at 3 $\frac{1}{2}$ per cent, about one billion dollars was borrowed in this way.

In 1926 no borrowing of any sort took place during the four-month period (April 23 to August 13) when the New York rate was $3\frac{1}{2}$ per cent, but during the ensuing period when the rate was 4 per cent, 1,360 million dollars of notes were issued. In the period of $3\frac{1}{2}$ per cent money, from August 1927 to February 1928, note issues amounted to about 1,200 million dollars. In February, in May, and in July 1928, the rate was advanced one-half per cent, the dates of the changes bearing no obvious relationship to the Treasury borrowings.

On the whole the record fails to substantiate the suggestion that during the past decade the Federal Reserve rediscount policy has been controlled with reference to Treasury needs. Let us examine next the record of open market operations.

The timing of open market purchases in relation to Treasury borrowing also indicates that the Reserve system has not been an instrument of Treasury finance. Obviously, if the Treasury sales of new issues tend to coincide with Reserve Bank purchases, the effect of the coincidence is to lessen the influence of Reserve Bank operations on the money market, and to enable the Treasury to sell its bonds at high prices. On the contrary, if Treasury sales and Reserve Bank sales coincide, the effect of the Reserve Bank operations is reinforced, and the Treasury has to sell on less favorable terms. The evidence is not conclusive one way or the other, but on the whole suggests that the co-operation between the two organizations has been such as to make the Treasury operations reinforce those of the Reserve Banks, rather than the reverse. The facts are these:

The long-term issue of October 1922 came at a time

when the Reserve Banks were reducing their open market holdings. So did the issue of 1924-25. The 20-30 year loan of 1926 came at a time when the Reserve Banks were neither increasing nor decreasing their holdings to any considerable extent. The 1,360 million dollar sale of March 15, 1927 was carried through some months before the Reserve Banks began the extensive series of security purchases which was described above (pages 47-48). The issue of July 1928 came at a time when Reserve Bank holdings were at the lowest ebb in more than four years; the issues of 1931 came when they were extremely high.

In short, in 1922, in 1924-25, and in 1928, large Treasury issues were made at times when the Reserve system was actively operating to tighten the market, and in 1927 a still larger issue was made several months before a great expansion of holdings started. There is nothing in this record, any more than in the history of rediscount rate changes, to suggest co-operation between the Reserve authorities and the Treasury to enable the Treasury to do its borrowing at low rates. Indeed, it might more plausibly be argued from these cases that the Treasury has become an instrument of Federal Reserve policy.

Aside from the question whether in specific instances the market has been rigged to help the Treasury, there is the more elusive question whether, regardless of year-to-year changes, the whole level of money rates fostered by Federal Reserve policy from 1922 to 1928 was so low that it must be regarded as a concession to the Treasury's interest in cheap money. This is a question on which opinions are likely to differ, partly in accordance with

one's views as to what constitutes a high or a low rate level, and especially in accordance with the weight one attaches to other factors which influenced, or might have influenced, Federal Reserve policy. Advocates of a policy of keeping rediscount rates so high as to make rediscounting only an emergency procedure can easily believe that the failure to follow this course was due to Treasury domination. On the other hand, those critics who condemn the Reserve authorities' policy as one of deflation, of stabilizing gold imports so as to prevent them from raising prices and lowering interest rates, will scoff at this idea.⁷

To me it seems very unlikely that Treasury policy has been a major factor in the decision to keep the general level of rates either as low or as high as it has been kept. It would be rash to say that this factor has been given no consideration, but at the times when low rate policies have prevailed there have been other powerful forces working in the same direction, and at times when they have not prevailed the Treasury's interest in low rates has been as great as at other times. Certainly if there has been a dominant purpose to help the Treasury borrow cheaply, the policy has been carried out very ineffectively.

The Reserve system has co-operated with the Treasury's program of keeping afloat a large volume of short-dated debt. Before the war the debt of the United States, other than current bills, was all funded. During the war there was inaugurated a practice of issuing short bills to meet current expenses, later refunding these bills from the proceeds of successive issues of Liberty bonds. At the close of the period of war finance, the refunding process

⁷ Compare Chap. XVI.

was left incomplete, and ever since that time there has been a definite policy of keeping from one-half to one billion dollars of the Treasury's outstanding obligations in the form of short-term certificates, which are owned chiefly by banks. By leaving the proceeds of sale of these certificates on deposit with purchasing banks, the Treasury has made them more attractive investments for banks than for investors. Moreover, the fact that member banks can borrow from Reserve Banks, using the certificates as collateral, has made them an ideal secondary reserve.⁸ Finally, the Reserve system's practice of buying and selling these certificates as a routine method of influencing the credit situation has made a market for them and thereby given them some added value.

It is beyond the scope of this book to estimate the fiscal results of the Treasury's policy of keeping the government debt in the commercial banks in the form of short-term certificates. Our interest is in the part played by the Reserve Banks in supporting this policy and in the resulting changes in the credit structure of the country. Is the sale and purchase of short-time government paper by Reserve Banks an effective method of carrying out a policy of easing or tightening the money market? Does the use of government paper for this purpose, or as collateral for member bank borrowings, interfere with the attainment of other objectives of Reserve policy?

To the first question the answer must be in the affirmative. For the purpose of regulating the pressure on the Banks, through changing the form of Reserve credit from open market purchases to discounts and vice versa, the practice of buying and selling short-term government securities suits the convenience of the Reserve

⁸ Compare p. 273.

Banks admirably.⁹ Such securities are not essential for the purpose, however. If they were not available, acceptances would probably be available in greater volume, and if the supply of these were not sufficient, Liberty bond purchases and sales could be made to serve the same purpose.

The policy of lending freely to member banks on the collateral of government securities has been criticized as making access to Reserve Bank funds too simple and too convenient, an objection which to me does not seem valid. If member banks are to be discouraged at any time from using Reserve credit, the proper method is to make it more expensive or, if necessary, to ration it—not to make it more cumbersome and awkward to utilize. Even now the use of the Reserve system by country banks is restricted by the fact that city correspondents sometimes make it convenient for them to borrow from the city banker rather than from the Reserve Bank. The fact that borrowings can be made on the security of government paper without the labor and red tape involved in using acceptances or rediscountable commercial paper is a gain.

Objection has been raised in some quarters to the policy which has been followed jointly by the Treasury and the Reserve system because of its effects on the development of the acceptance market and on the practice of financing through commercial paper. The injection into the banks of a large volume of government paper,

⁹ Governor Strong's testimony on this point was as follows: "I think it would be a great misfortune if the temporary borrowings of the Treasury—the short borrowings—should be materially reduced beyond what they now are until we have a larger volume of bills in the New York market which might serve to perform the same function that these short Treasury certificates do." (69 Cong. 1 sess., *Stabilization*, Hearings on H.R. 7895, Part 1, p. 449. See also *ibid.*, pp. 450-51.)

nominally short-time but really of investment character, is regarded as one more step in the process of tying up the funds of the banking system in assets which can be liquidated only through sale in the market. The decline in the volume of eligible paper held by member banks is in large part attributed to the fact that eligibility is of little importance from the bankers' standpoint. If banks could not borrow on government paper, they would have an added interest in encouraging business men to obtain capital through short-term "commercial" paper and acceptances, rather than through the security markets.

The policy with reference to short-term government securities conflicts with the policy of encouraging the use of acceptances. As was noted in Chapter XII the Reserve system has professed great interest in the development of the bank acceptance and has given it almost continuously a rate preference over rediscounted paper. The System has not, however, given the acceptance a preference over government paper in its purchases. As was pointed out on page 261, one prime cause of the reluctance of commercial banks to buy acceptances is the fact that under present conditions Treasury certificates are a better investment, because they are tax-exempt and readily salable, and carry with them a preference in the securing of government deposits.

The issue as to the desirability of funding the short-term debt reduces itself, in so far as it is a banking and not a fiscal question, to the same one which was discussed in Chapters XII and XIII, that is, whether bank funds should be put out through the medium of self-liquidating instruments in the old sense, or whether banks obtain sufficient liquidity by buying and accepting as loan

collateral securities which have an open market salability but cannot be liquidated outright.

If we hold fast to the ancient tradition of sound banking, the policy pursued jointly by the Treasury and the Reserve Banks must be condemned; it has been a powerful factor undermining the commercial paper market and obstructing the growth of the bill market. As is indicated more fully in Chapter XVII, my judgment is that these results have not been harmful to the credit structure of the country. The marketability of the United States Treasury certificates has made the development of a market for commercial paper and acceptances difficult, but it has done it by providing what seems on the whole a very satisfactory substitute.¹⁰

¹⁰ I should like to express dissent to the general view, with which the author appears to be in accord, that the Federal Reserve Board in formulating its policies should give no consideration to Treasury requirements. While it goes without saying that the Board should be free from political considerations of every kind and description and should not be under the *domination* of the Treasury, it by no means follows that an independent board should not place fiscal needs on a parity with other considerations. Public finance and private finance are closely related parts of a single financial organization, and Federal Reserve policy must envisage both if a healthy condition of business is to be maintained. There are times, indeed, when considerations of public finance are of absolutely vital importance to business welfare.—Harold G. Moulton.

CHAPTER XV

REGIONAL UNIFORMITY OF RATES

In this chapter we consider the policy of the Reserve system with regard to uniformity of rediscount rates between Federal Reserve Districts and the effects of Reserve policy on the regional structure of bank loan rates.

Throughout our history, interest rates, both those paid on mortgage loans and those charged by banks over the counter, have generally been higher in the West of the United States than in the East, and higher in the South than in the North. This difference results in part from the fact that the older sections of the country are better supplied with capital. The West borrows from the East, and naturally rates are higher in the borrowing section. In part also the difference is probably due, so far as rates on bank loans are concerned, to the fact that in the agricultural regions banks find it more difficult to get adequate diversification of risk. They are, therefore, under more temptation to make doubtful loans and their loss ratios run higher. Moreover, banks in the West and South are smaller than in the Northeast and therefore have somewhat higher operating ratios.

The sectional difference in interest rates, coupled with the fact that certain large regions have been borrowers from other regions, has been one of the major sources of sectionalism in American thinking, and has frequently given rise to bitter political controversy. The fight on the Second United States Bank, the Greenbacker movement, and the Free Silver controversy are among the conspicuous expressions of the conflict of interests be-

tween the capital-rich and the capital-poor sections. Naturally there was some expectation that a thoroughgoing reform of our banking system, carried out under Democratic auspices, would be of some aid in this direction. It would not have been surprising if the newer sections of the country had attempted to obtain in the Federal Reserve Act a provision for uniformity of rediscount rates, such as characterized the Federal Farm Loan and Federal Intermediate Credit Acts. No serious effort of this sort was made, however.

The plan on which the Reserve system was organized created a presumption against uniformity of rates. The Aldrich plan had provided for uniform rediscount rates throughout the country. In contrast to this, the regional system of control set up in the Federal Reserve Act clearly implied that rates would vary from district to district. The power of the Federal Reserve Board to "review and determine" rates certainly did not contemplate the establishment of a single rate throughout the System.

It may seem curious that the earlier plan, which in general represented the views of large banking interests, should have provided for uniform rates, while a bill drawn under the influence of the West and South left the door open for the charging of higher rates in the poorer sections. There are two explanations. In the first place the political elements which framed the Reserve Act were deeply interested in maintaining the independence of the individual Reserve Banks. Uniformity could obviously only be attained through centralization of the rate-making power; the avoidance of such centralization was the cardinal feature which distinguished the Glass bill from the Aldrich plan. Second, there seems to have

been general acceptance of the idea that some divergence of rates between districts was desirable, perhaps necessary. Economists generally held that the difference in rates reflected such large differences in the supply of savings in the older and newer sections that it was impracticable to overcome them. It was agreed that a policy of uniform rediscount rates would infallibly lead to inflation in the newer sections, if rates were fixed at a low enough level to make the rediscount provision of any value in the East.¹

In the early years of the Reserve system there was apparently no attempt at uniformity of rates. The original schedule of discount rates, established on November 16, 1914, provided for 5½ per cent on paper of less than 30 days' maturity at New York and Philadelphia, and 6 per cent at the other Banks. Rates for longer maturities were fixed at 6 per cent at some Banks and 6½ at others. During the next few months the rates were rapidly lowered, all Banks getting down, before May 1, 1915, to 4 per cent or less for paper maturing within 60 days. Rates in general remained as low as this till after the war.

As a rule during these early years, two rates were in effect in the System for each of the more important types of paper, some of the Reserve Banks charging one-half per cent more than the rest. The lack of uniformity from district to district, however, appears to have reflected variations in the judgment of Reserve officials rather than actual geographic differences in money markets. For example, on January 1, 1916, the New York and

¹ See for example discussion in B. H. Beckhart, *The Discount Policy of the Federal Reserve System*, pp. 111-13, including quotations from Professors Willis and Sprague.

San Francisco Reserve Banks had identical rates on paper maturing in less than 10 days and also in from 31 to 60 days, while New York was one-half per cent higher than San Francisco on 11-30 day paper and one-half per cent lower on 61-90 day paper. Such variations as these can hardly be explained on the basis of differences in the economic needs of the various districts.

From the beginning, lack of uniformity in rediscount rates was apparently regarded by the Federal Reserve Board as an evil. In its report for 1915 the Board said: "It may not be practicable to maintain uniform rates through the twelve districts, but they should unquestionably bear a consistent relation one to another, while a very much greater adherence to uniformity than before the enactment of the Federal Reserve Act will undoubtedly be secured."²

War finance did much to unify the money markets of the country, and discount policy reflected this development. During the war the bulk of bank borrowing was done on the security of United States obligations, and uniform rates were generally maintained for such loans.³ The changes which were made from time to time reflected national conditions, chiefly changes in the rate paid on successive issues of Liberty Loans, rather than local conditions in the several districts.

During recent years there has been a strong tendency toward uniformity of rediscount rates. The rate was uniformly $4\frac{1}{2}$ per cent at all Banks from March 6, 1923 to May 1, 1924. Then for a year and a half there was considerable diversity. During this interval, one Bank

² *Annual Report of the Federal Reserve Board*, 1915, p. 5.

³ Three banks maintained a $4\frac{1}{4}$ per cent rate on notes secured by war paper in the last half of 1918, while all the rest were on a 4 per cent basis.

went to 3 per cent, and four others to $3\frac{1}{2}$ per cent, while seven did not go below 4. By January 8, 1926, however, all rates were once more uniform at 4 per cent, and from that time till 1931 there were no independent local movements at any Reserve Bank except New York.

In 1926 New York rates were lowered in April and raised in August, independently of other Banks, and in 1929 they were raised in August and lowered in November. In 1930 New York rates kept dropping ahead of the other Banks and ended the year at 2 per cent, with two others at 3 per cent, and the rest at $3\frac{1}{2}$. In 1931 there was less uniformity of movement. The last of the series of reductions was made in May, at which time the range was as follows: $1\frac{1}{2}$ per cent, one Bank; 2 per cent, one Bank; $2\frac{1}{2}$ per cent, four Banks; 3 per cent, five Banks; $3\frac{1}{2}$ per cent, one Bank. There were no further changes until October 9 when there began a series of advances which quickly wiped out most of the differences.⁴ From January 28 to June 24, 1932 all Banks except New York had the same rate, $3\frac{1}{2}$ per cent.

In summary, aside from New York rediscount rates, there were no differences in the five years 1926-30, except those due to lags in the process of changing the System from one level to another. A shift of rates was never made simultaneously at all Banks, and frequently the successive changes were spread over several months. The order in which the Banks changed their rates displayed no uniformity and was generally not to be explained on discernible economic grounds.⁵

⁴ Every Bank except Minneapolis and Atlanta raised its rate in one week of October 1931.

⁵ A decline from 4 per cent to $3\frac{1}{2}$ per cent started at Kansas City July 29, 1927 and was completed at Minneapolis on Sept. 13. The return to 4 per cent started at Chicago on Jan. 25, 1928 and was com-

The theory that regional rates reflect the independent judgment of local boards of directors is dead. This fact became dramatically clear in the Chicago case of 1927,⁶ but even without that incident would be obvious from the general uniformity of rates and the way in which the rate changes in one district follow those in another. Since the open market policy is even more obviously centralized,⁷ we cannot properly speak of the credit policy of an individual Reserve Bank—unless indeed that Bank is strong enough to impose its policy on the System.

It is clear also that those who control the System's policies attach but little importance to inter-district differences in money market conditions. There has never been any formal declaration of an intention to maintain a uniform rate structure; indeed there have been statements that such is not the purpose.⁸ But in practice it is

pleted at Cleveland on Mar. 1. The next advance to $4\frac{1}{2}$ per cent started at Boston and Chicago on Apr. 20 and was finished at Kansas City on June 2. The movement to 5 per cent started at Chicago on June 7, 1928 and was completed for eight Banks by Aug. 1, but the other four did not advance till the spring of 1929, the changes occurring on Mar. 2 and May 6, 14, and 20. Thus these changes required respectively, six weeks, five weeks, two months, and in the last case two periods of three weeks and seven weeks respectively, some nine months apart. On the downswing, in 1929-30, leaving New York City out of account, the time-lags in the changes, between the first and last Bank, were as follows: 5 to $4\frac{1}{2}$ per cent, 12 weeks; $4\frac{1}{2}$ to 4 per cent, 9 weeks; 4 to $3\frac{1}{2}$ per cent, 4 months. In the change to 3 per cent there was little uniformity, but nine Banks made the change between Dec. 29, 1930 and May 21, 1931. Minneapolis never did go below $3\frac{1}{2}$, and five other Banks did not go below 3. Four Banks went to $2\frac{1}{2}$ in May 1931.

⁶ See p. 48.

⁷ See pp. 39-40.

⁸ For example, Governor R. A. Young testified as follows at the hearings on Brokers Loans: "I am not a believer in the uniformity of rediscount rate at all times and under all conditions at all of the Federal

obvious that changes are made in accordance with a unified plan and that any local conditions which might make differences in rates desirable are subordinated to the supposed needs of the country as a whole.

Early opposition to uniformity of rate policy was in part due to exaggeration of the independence of the money markets of the country. In the discussions of the Reserve plan too much emphasis was placed on the rates at which banks lend, which do differ widely from region to region; and not enough attention was paid to the cost to the banks of securing funds otherwise than through rediscounting, which shows much less divergence. From the standpoint of rediscount policy the important question is not the rate at which a bank lends over the counter to customers who have no convenient alternative source of capital, but the cost at which it can meet its temporary needs elsewhere as an alternative to rediscounting. Before the Federal Reserve system came in, the usual method was to borrow from a correspondent bank in a financial center. Such borrowing was always common, though often more or less concealed.⁹ To a much greater extent than was anticipated, the system of

Reserve Banks. The fact that the rate is now 4 per cent at all the Banks comes about as the result of the action of their directors."

"Senator Glass. Does not that come about because the directors have been taught to believe that the Federal Reserve Board here at Washington has established the policy of uniform rediscount rates throughout the United States?

"Mr. Young. Well, I would be very sorry, Senator, if they did have that feeling. I can see why they possibly might have felt that way, but I think that at the present time the directors of the Federal Reserve Banks do not have that feeling." 70 Cong. 1 sess., *Brokers' Loans*, Hearings on S. res. 113 before Committee on Banking and Currency, pp. 71-72.

⁹ Compare O. P. Lockhart, "The Development of Interbank Borrowing in the National System, 1869-1914," *Journal of Political Economy*, 1914, Vol. 29, pp. 138-60, 222-40.

interbank credit relationships survived the establishment of the Federal Reserve system, and became an obstacle to the maintenance of high rediscount rates in regions where customers' rates were high. From the beginning, indeed, though city banks rediscounted at the Reserve Banks, country banks continued to do a considerable proportion of their borrowing through their correspondents.¹⁰ Since the rates on interbank loans are not controlled by the location of the borrowing bank, interbank lending makes it difficult to maintain differences in Reserve rediscount rates.

Those lending rates which vary most from region to region are the least important in determining the proper level of rediscount rates. An exaggerated importance has always been attached to the relationship between the rediscount rate and the rate which the borrowing bank gets on its high-rate non-liquid loans. There are large regional differences in rates charged customers over the counter, but the rate earned in these transactions does not determine how much a bank will seek to borrow at a given rediscount rate. From the standpoint of a bank, the limiting factors in the granting of local high-rate loans are risk and liquidity, rather than cost of borrowed capital. If the banks believed they could safely make more high-yield loans they would do so, whether they could rediscount or not. For, even without borrowing or rediscounting, a solvent bank can almost always obtain some additional funds at a cost lower than the rates it charges to local borrowers. All that is necessary is to reduce the secondary reserves. There is practically always

¹⁰ At the end of 1923 country national banks obtained 18.6 per cent of their borrowings elsewhere than from their Reserve Banks, and at the end of 1926, the figure was 23.1. See L. L. Watkins, *Bankers' Balances*, 1929, Chap. VII, especially p. 183.

a margin of funds invested in open market commercial or cattle loan paper, loaned on call, or deposited at low rates with correspondents.¹¹ This reserve of low-yield liquid loans and investments varies in size as the local supply of safe loans goes up and down, and as the bank's lending policies are changed.

What is important is that rediscount rates shall not offer to banks an opportunity to shave out a profit by borrowing to make or maintain open market loans. That would be inflationary in tendency, for such transactions are not kept down adequately by the factor of risk, and do not seriously impair liquidity. But it is a matter of relatively small consequence that rediscount rates are always lower than rates on the slow-moving customers' loans, in the East as well as the West.

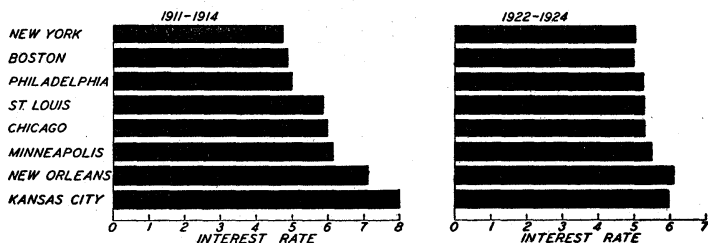
The maintenance of uniform rediscount rates has been made easier by the appearance of greater unity in the open money markets of the country. The accompanying chart shows the trend toward equalization of open market money rates in the larger financial centers. In part this tendency may be the result of Federal Reserve policy, but there have been other forces working in the same direction. The most important of these is probably the creation of a great mass of short-term government paper, mostly held by banks, which sells throughout the country at a uniform rate and is shifted about with the greatest ease in response to changes in the money market.

A second, and less important, factor is the development of the acceptance market as an outlet for Reserve funds, the yield of the acceptances being the same no matter which Reserve Bank buys them. A third is the great increase in the public buying of stocks and bonds,

¹¹ Compare pp. 328-30.

which of course are sold at uniform prices throughout the country. Finally, the spread of large-scale business organizations, especially chain systems, has increased the proportion of the business of outlying centers which is

CUSTOMERS' RATES IN LEADING CITIES BEFORE AND AFTER
THE ESTABLISHMENT OF THE FEDERAL RESERVE SYSTEM^a



^a Data from W. R. Burgess, *Reserve Banks and the Money Market*, p. 288.

financed in the central money markets, or is able to resort to them if satisfactory rates are not offered in the local community.

It is uncertain whether the operation of the Federal Reserve system has tended to equalize rates charged over the counters of banks. It is generally believed that there has been some equalization of rates. However, the table on page 302, computed and condensed from a table of rates by months prepared by the Division of Research and Statistics of the Federal Reserve Board, shows no evidence of such a tendency so far as the period since 1918 is concerned. What it does show is that the rates charged in the cities in all sections of the country are much more uniform in periods of tight money than in periods of easy money. Banking conditions in the financial centers of the East are much more competitive than in the West and South. When money is abundant

rates in New York especially tend to drop much faster than elsewhere; when money becomes tight they go up correspondingly faster. In July of 1924 the differential between New York and the reporting Banks in the South and West widened to 1.75 per cent.¹²

DIFFERENTIALS IN CUSTOMERS' RATES^a
(Excess, in hundredths of 1 per cent)

Year	Eight Northern and Eastern Cities over New York	Twenty-Seven Southern and Western Cities over the Northern and Eastern Cities	Southern and Western Cities over New York
1919, January	25	32	57
1920, "	6	17	23
1921, "	28	11	39
1922, "	58	48	106
1923, "	52	56	108
1924, "	32	49	81
1925, "	64	77	141
1926, "	50	42	92
1927, "	33	73	106
1928, "	17	80	97
1929, "	13	7	20
1930, "	24	24	48
1930, December . .	52	74	126

^a *Annual Report of the Federal Reserve Board*, 1930, p. 83. The reports are all for city banks; country banks would undoubtedly show considerably higher differences throughout the period.

If there has been any equalization of rates charged by country banks, the responsibility of the Reserve system is even more doubtful than in the case of rates in the larger cities. The Federal Farm Loan system and the Federal Intermediate Credit system have been working toward equalization of rates charged farmers in different sections of the country much more directly than has the

¹² Compare W. W. Riefler, *Money Rates and Money Markets in the United States*, p. 95.

Federal Reserve system. Certainly in 1920 the Reserve system made it easier for the South and West to shift part of the strain to the Northeast, but there is little in the record of Federal Reserve operations since 1922 to suggest further influence in this direction.

The Federal Reserve system has not done away with the practice of interbank depositing and lending. It has centralized the legal reserves, but left untouched the practice of carrying deposits with banks of larger cities as secondary reserves. This has been a disappointment to many more people than are interested in the reform of over-the-counter lending practice.

One of the prime purposes in the minds of the founders of the Federal Reserve system was the prevention of the flow of bank funds from the interior to New York, and this objective still bulks large in the thought of the American public. It is grounded in the regional conflict of interest which has always colored our financial thinking. It also reflects a failure on the part of the public to understand fully the reasons which lead country banks to carry balances with New York banks and to lend their funds in the New York money market. Since the West has always been capital poor and has been a heavy borrower from the East on long-time account, it appears anomalous that western banks should be lenders in New York on short-time account, especially since the return from balances carried with city correspondents is always considerably less than the rates charged borrowers in the bank's own community.

The fundamental reason for the practice, of course, is found in the country bank's needs for more diversification in its investments than the local community furnishes and, more important, in the necessity of keeping

a considerable proportion of its assets liquid.¹³ For the same reason that part of a bank's resources must be carried as cash in the vault without any return, another much larger part must be kept in highly liquid form, even though the return is very small. From the standpoint of the banker an interest-bearing balance with another bank is a way to eat his cake and have it too—it is at the same time an earning asset and a reserve against calls from depositors.

As a practical matter the only way in which country banks can put their reserves into a form to earn them something and at the same time have them immediately available is to lend them out in financial centers or deposit them there. Except for seasonal peaks, there are few opportunities for making very short-time loans to farmers or manufacturers or wholesale and retail distributors. Nowhere is there any considerable demand for loans repayable on demand except in connection with the purchase and sale of securities and of commodities which can be turned over on very short notice. In practice that means operations in speculative security and commodity markets, for immediate marketability and speculative trading go together.

From the standpoint of a country bank, a New York balance or a call loan is practically as good a reserve as cash in the vault.¹⁴ The fundamental reason which leads to interbank depositing is the same as the reason the banking systems of the less commercialized nations carry

¹³ In part also the balances are a compensation for services rendered by the city correspondent.

¹⁴ It must be remembered that the legal reserve deposited with the Reserve Bank is a frozen asset. It can be reduced only on the basis of a tenfold, or greater, reduction of the deposits. Hence it is nearly useless as a source of funds to pay off the depositors.

reserves in the form of balances in the banks of foreign financial centers and in foreign bills of exchange—namely the desire to keep some funds in a form as nearly equivalent to cash as possible, and still to have them bring in some return. In both cases the reserves, if they are to be really available and at the same time are to earn a return, must be placed in important investment and speculative centers. The dependence of our country bankers on such balances in lieu of cash reserves is simply the use of the gold exchange standard in domestic finance.

Deposits with city correspondents and over-the-counter loans are usually non-competing uses of funds. So long as the rate paid to country banks on balances in New York is below the rate which these banks charge their customers for loans over the counter, or earn by investing in local securities and paper of intermediate length, there is no real danger that local enterprises will be starved by the competition of the central money markets. The fact that a bank has funds which it can place elsewhere in a demand deposit or invest in securities which have an immediate market is no proof that it has funds that it can safely tie up in commercial or investment operations, any more than cash in the vaults is a proof of ability to make additional loans of equivalent amounts over the counter. The uses are non-competitive (except when call loan rates are running at exceptionally high levels). A bank has the same interest as its local customers in keeping as much of its money at work in financing their operations as is consistent with safety. When country banks send money to New York to earn 2 per cent at a time when their customers are willing to borrow at 8 per cent, it is a safe assumption that but

little of the money could safely be made available for the local 8 per cent loans, even if the 2 per cent were not to be had.

Low rediscount rates at an individual Reserve Bank do not make funds scarce in its district. The idea is widely held that high rediscount rates at interior Reserve Banks benefit the business interests of the interior by attracting capital to them. This doctrine, which found expression particularly often at the time of the controversy between the Chicago Bank and the Federal Reserve Board in 1927, is entirely fallacious. It is true of course that, other things being equal, the payment of high rates will attract money from outside, which is better for the business interests of the interior than it would be to do without the funds. If the payment of higher rates to outsiders were estopped, say by a usury law, the result might be a shortage of credit—for instance, for crop-moving.

But if low rates prevail in a district simply because the Reserve Bank—or any one else—stands ready to supply the funds at less than the rate needed to attract funds from outsiders, the low rates cannot possibly cause a shortage of funds. The banks and business interests of the West are still free to bid as high for capital in New York as they wish; the action of an interior Reserve Bank in lowering its rates interferes with the movement of private capital into the district only to the extent that it makes it superfluous.

Of course, a Reserve Bank may get itself over-extended if it makes borrowing too easy. This happened in 1919-20. But so long as the Reserve Banks have ample reserves—and that has been the situation continuously for the last ten years—the only reason for object-

ing to low rates is their inflationary tendency; the idea that they keep capital out of the districts in which they prevail is absurd.

In summary, my judgment is that the drift of policy in the direction of uniformity of rates is a good thing. Mistakes will be made from time to time no matter whether the decisions are centralized or are made locally by the Reserve authorities in the various districts. But on the whole we have a unified open money market, and a unified discount policy is only a reasonable recognition of the facts. The fear entertained 15 years ago that rates high enough to prevent inflation in the West would be deflationary in the East has proved itself to be groundless.

PART IV
THE RESULTS OF CREDIT CONTROL

CHAPTER XVI

THE QUANTITY OF CREDIT: EXCESS OR DEFICIENCY

We have now examined separately the dealings of the Reserve system with a number of specific issues—international comity, stabilization of business activity, the control of speculation, and the encouragement of credit operations of certain types at the expense of other types. It remains to undertake a more difficult task; to appraise the combined result of the varying degrees of attention given to these more or less conflicting considerations.

The question of the soundness of our bank credit policy has a quantitative and a qualitative aspect. In the years when the Reserve system was in the process of formation, there was much interest in qualitative issues such as the maintenance of bank liquidity, the discouragement of the use of bank credit in speculation, and the regional allocation of credit. In the post-war era a large share of the emphasis has shifted to the quantitative question. The primary concern of central banks is believed to be in the creation and maintenance of the right total amount of credit currency.

That I am in substantial agreement with this viewpoint is perhaps sufficiently indicated by the relegation of discussion of most questions of qualitative control to Part III as minor issues. And in Chapter XVII it will be argued that the most important of the qualitative issues, namely, the shift of banks from a policy of commercial lending to one of security purchases and security loans, derives its greatest importance from its bear-

ing on the total quantity of bank credit. Other qualitative issues, including the use of credit for speculation, have been treated as of secondary importance.

Our principal interest is in the question whether too much, too little, or just enough bank credit has been created. Viewed from this standpoint the period covered by this study breaks into two quite distinct parts. In 1930 and 1931 Reserve system policy, like all other central banking policy, was dominated by an urge to stem the tide of liquidation, tempered in the last few months of 1931 by fears for the stability of the System itself. In the earlier period, 1922-29, on the other hand, the System operated under no such pressure and was free to shape its policies in the light of whatever standards it deemed most appropriate to an economic situation which was constantly changing but was never so critical as to compel concentration of effort on the immediate emergency.

We shall consider in this chapter chiefly the policies pursued between the end of 1921 and the end of 1929. The basic facts have all been stated in previous chapters. In summary, the policies pursued during these years were such as to cause, or not to prevent, the following developments:

1. For the period as a whole practically no change in the volume of Reserve credit outstanding.
2. A strong inflow of gold into this country (seriously interrupted only twice), the net increase over the whole period amounting to 624 million dollars—this in addition to a net inflow of 734 million dollars in 1921.
3. An increase of 616 million dollars, or 35 per cent, in member bank reserves.
4. An increase of 12,450 million dollars, or 54 per

cent, in member bank loans and investments; and of 12,130 million dollars, or 58 per cent, in member bank deposits (net demand plus time deposits).

5. For the whole period a relatively slight net change in commodity prices, but considerable fluctuation from year to year.

6. A very great increase in the absolute and the relative amount of bank credit which was used to finance investment, either through the purchase of securities by banks or by the extension of collateral loans.

7. A great boom in security prices, followed by a crash.

8. A period of great industrial prosperity interrupted by two very brief depressions, and ending with a decline of extraordinary severity.

In the light of these facts, was our credit policy during these years to be classed as unduly liberal, harshly restrictive, or wisely neutral? How far is the Reserve system to be given credit for such prosperity and stability as we have enjoyed; and how far can it be blamed for our failure to achieve an economic millennium and stabilize our activities at that level?

As we have found in previous cases, there is no common judgment among critics, and no absolute demonstration that one student's analysis is right and another's is wrong. One influential group of critics, mostly Englishmen, hold that almost without exception the policies pursued were radically restrictive. In proof they point to the slow decline of prices from the end of 1924 through 1927 and the collapse of 1929-31, a decline which occurred in the face of an enormous increase in our share of the world's monetary gold. Another group concludes that our policy on the whole was inflationary

and points to an increase of 6 per cent per annum in bank credit, and to the rise in prices of stocks and of real estate.

The difficulty in securing agreement on this point is due in part to the somewhat anomalous character of the gold movement. Ordinarily an inflationist policy is expected to lead to a gold outflow, but here we have a steady increase in credit, outrunning the growth of production, yet frequently coinciding with a great inflow of gold. The credit figures suggest domestic inflation; the gold movement suggests domestic deflation; and the price changes do not clear up the difficulty.

The controversy does not relate to the question as to what actually was done, but to what ought to have been done; the issues are not those of history, but of policy. Any policy is called inflationary if it is less restrictive than the critic thinks it should have been, and deflationary if it fails to provide for the increase of funds which the critic believes to have been desirable. It is more important, therefore, in this final analysis to clarify the theory of sound credit policy than to elucidate further the basic facts.

It is necessary, however, first to clear up one issue of a purely technical character. This is the question whether in comparing the growth of credit with the growth of the country's needs, the critical item is Reserve Bank credit, member bank reserves, currency, or the volume of bank deposits. For, as was noted above, the rates of growth of these items are widely divergent.

I. RESERVE CREDIT AND BANK CREDIT

It was pointed out above that over the years 1922-29 Reserve Bank credit hardly increased at all, mem-

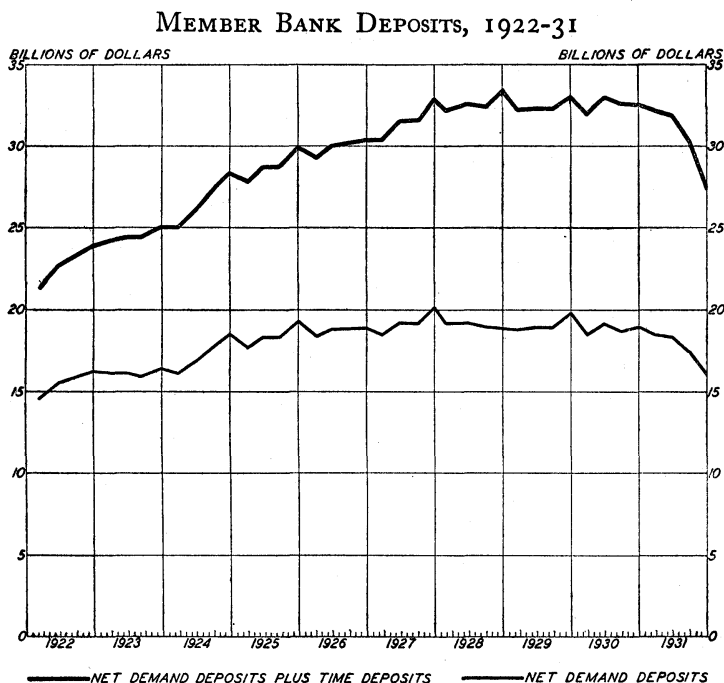
ber bank reserves increased 22 per cent, and member bank deposits increased 39 per cent. The differences are due partly to gold movements, partly to changes in the extent to which currency is used either for business or for hoarding purposes, and partly to technical changes in the relationship between member bank deposits and required reserves, such as changes in the proportion of deposits carried in banks under different reserve requirements and in the proportion of time deposits to demand deposits.

The question presented by the gold movements has been considered in Chapter IX, where the conclusion was reached that during the first part of the period under review it was sound policy to offset the outflow and inflow of gold by credit operations but that after 1924 or 1925 it would probably have been better to allow them to exert their full influence on the volume of credit outstanding.

As to the technical changes which have made possible a vast increase of credit in the United States without an increase of Federal Reserve credit, the principle is quite clear. Changes in the ratio of time to demand deposits, and changes in the proportion of deposits that are carried in banks which have different requirements, are equivalent to changes in the size of the credit base. They have no predictable relationship either to the volume of savings or to any conceivable rational policy of supplementing the volume of savings with a larger or smaller quantity of artificial purchasing power.

Such changes have been taking place on a tremendous scale, as is shown by the chart on page 316, and have made possible a very large expansion of member bank credit without a corresponding expansion either in Fed-

eral Reserve credit or in the gold supply. Because of these shifts, nominal stability of the credit base from 1925 through 1929 would have been equivalent to a secular growth of at least 2 per cent under more nor-



mal conditions.¹ Obviously if we are to have a policy of credit control we must expect the controlling agency to neutralize all such unplanned changes in the techni-

¹ From January 1926 to January 1930 gold stock plus Federal Reserve credit increased less than 1 per cent, while net demand plus time deposits increased by 16 per cent. Compare Professor Edie's criticism of the failure of the Federal Reserve Board to provide the usual increase in the member bank reserves in 1925 and 1926, *American Economic Review*, Supplement, March 1928, Vol. 18, pp. 59-60; discussed by the author of this volume, *ibid.*, pp. 71-72.

cal requirements for credit, unless they happen to fall in with the drift of Reserve policy.

The same thing can be said, so far as the United States is concerned, of changes in the circulation of hand-to-hand currency. This would not be true of most countries, but bank deposits play so large a part in our economic life that there is no danger that an expansion of cash will result in disturbance of the equilibrium of production and consumption, unless there is also an undue expansion of bank deposits. Control of the volume of the note circulation is not an objective of credit policy; on the contrary the amount of notes used constitutes one of the conditions which determine the amount of Reserve credit that is needed. Thus the decline of hand-to-hand currency circulation which took place between the end of 1923 and the end of 1929 called for a corresponding contraction of Reserve credit, if the System was to hold itself neutral toward the money market. For this decline in currency in no way tended to create a shortage of funds; it was simply a change in the amount of currency which the business of the country required.

If these conclusions are accepted, it follows that the Reserve system can fairly be held responsible, within the limits of its powers, for the amount of change in member bank deposits which occurred during the period of our study.² Changes in monetary circulation and changes in the proportion of deposits of different classes and in the proportion of deposits held in banks with different reserve requirements were not factors which should have been allowed to determine the volume of bank reserves; they were only factors determin-

² Except as this principle is qualified above with regard to gold movements.

ing the amount of change in Federal Reserve credit which was necessary in order to support a given volume of bank credit. The business of the Reserve system policy was to decide the total of member bank credit that was needed, and then adjust its own credit to the situation created by changes in these other items.

II. THE AMOUNT OF CREDIT WHICH A COUNTRY NEEDS

Any decision as to whether the credit supply is growing at the proper rate involves determination of the fundamental principles which should determine a central bank's credit policy. Aside from the views of the few remaining advocates of *laissez faire*³ and those of the moderate expansionists,⁴ theories of the proper test of central bank credit policy fall into four main groups. These are: (a) the widespread advocacy of commodity price stabilization; (b) the suggestion of the stabilization of the value of the factors of production;⁵ (c) the doctrine of money market stabilization;⁶ and (d) the theory of neutral money.⁷

The last three types of theory are closely interre-

³ Among whom Professor Mises stands pre-eminent.

⁴ A case for a policy of continuous moderate expansion of bank funds is presented by H. G. Moulton in his articles on "Commercial Banking and Capital Formation," Part IV, *Journal of Political Economy*, 1918, Vol. 26, pp. 868-78. Keynes also sometimes supports this position; for instance when he defends the choice of a wholesale rather than a retail index as a guide for stabilization on the ground that the moderate degree of credit inflation involved in stabilizing such an index against the effects of technological change will conduce to a desirable redistribution of wealth. (*Treatise on Money*, Vol. II, pp. 393-94).

⁵ Compare p. 218.

⁶ One form of the theory of the defenders of money market stabilization is that which was held by a considerable number of bankers in the formative stage of the Federal Reserve system; namely, that the Reserve Banks should in general confine their activity to emergency situations, or emergency and seasonal operations. Other forms of the doctrine are found in the writings of B. M. Anderson and H. Parker Willis.

⁷ Recently elaborated by Professors F. A. Hayek and Gustav Haberler.

lated; indeed as I interpret them they come to practically the same thing. The doctrine of "neutral" money is simply that the allocation of the resources of society to the satisfaction of different wants should not be influenced by either the injection of new money into the processes of production and distribution or the elimination of money from them; that the market rate of interest should represent the free competitive price for the current volume of savings; and that disequilibrium results from any alteration of the money stream either by the creation of new money or by the abstraction of old.

It was pointed out in Chapter X that stabilization of the value of the factors of production is in effect stabilization of prices against all changes which result from monetary causes. This is really an attempt to keep the money "neutral" by watching certain prices which are free from the effects of changes in production technique in order to detect the effects of excessive or deficient money. A policy of stabilizing the money market against abrupt changes is also approximately a neutral money policy, since the causes of disturbance in the short-term money markets are either sudden changes in the money supply or else are substantially identical with the conditions which cause a neutral money supply to diverge suddenly from a stationary money supply.

I am in complete accord with the neutral money principle. I am inclined, however, to interpret the grounds for positive action on the part of the central banking system under this principle more broadly than the doctrine may seem at first thought to justify. Neutral money must not be identified with unchanging money. For it is clear that a money supply which for

a given population is just adequate to effect the customary volume of exchanges and provide the customary volume of pocket and till money may become either redundant or inadequate, and hence in effect an unstabilizing factor, because of changes in the size of the population, in the amount of currency hoarded, in the relative popularity of checks and cash, or in public opinion concerning the outlook for a financial catastrophe or a financial millennium. Central bank activity which is designed to facilitate the readjustment of the supply of currency and credit to such changes must be regarded as wholly consistent with the maintenance of neutrality. And, as was indicated in Chapter X, changes in money which are designed to stabilize the prices of the factors of production are efforts to maintain the neutral character of money by permitting those changes in price levels which result from changes in the technique of industry, while preventing those changes which arise from the failure of the money supply to maintain its neutral character.

The clearest case is that of the seasonal fluctuation. Here the Federal Reserve system has adopted a consistently passive policy,⁸ and the results have been wholly satisfactory. It seems to me quite clear that in any country where there is a pronounced seasonal swing in the volume of credit or currency used in production and trade, the currency system can be made more truly neutral, and less susceptible to shock and strain, by a deliberate adaptation of the supply of credit to this seasonal change in demand.⁹ Likewise, a sudden increase

⁸ Compare pp. 66-68.

⁹ Professor Hayek is certainly wrong, so far as the United States is concerned, in his judgment that the seasonal fluctuation in the demand for credit is merely a change in the form of money. (*Prices and Produc-*

in the demand for cash, such as occurred in the United States and in many other countries in the fall of 1931, if there is no adaptation of the supply of money, will make the actual supply less adequate and will operate just as would a direct withdrawal of cash under more normal conditions.

The proper treatment of cyclical fluctuations in the demand for funds presents a knottier problem, and one on which it may be wiser to suspend judgment until we understand better the nature of the business cycle, for a critic who has no panacea need not hasten to speak in a time like the present. The Federal Reserve system, in common with most other central banking systems, is definitely committed to the view that its duty is to try to stabilize business by making it artificially easy in periods of depression, and until a more promising remedy is brought forward it is certain that there will be extensive experimentation with the possibility of reviving business by cheapening money.

Although, as was indicated in Chapter V, I am extremely pessimistic as to the practical value of such expedients, I believe that they are theoretically consistent with the principles of neutrality of the money supply toward the rest of the economic order. A depression is characterized, among other things, by an accumulation of private unspent balances in the form of notes and of slow-moving bank deposits. These "hoards" are created by withdrawals from active circulation of cash

tion, 1931, p. 95). There is a tendency for both currency and bank credit to expand in the fourth quarter of the year without any stimulus in the form of cheaper market rates for money. Though the Federal Reserve system has intervened to make its credit more abundant at that season money rates still average a trifle higher than in the summer.

and of deposits which would otherwise be offered for goods.¹⁰ Prices fall and production is curtailed because this demand for new savings in the form of cash and bank deposits involves a corresponding curtailment of money demand for goods in the flow of trade. If this is true, then it is a neutral rather than an inflationary policy for central banks to expand credit enough to offset the withdrawal from active circulation of funds which are tied up in the expanded "savings" deposits. The difficulty is, as was indicated in Chapter V, that the new supply does not necessarily replace what has been withdrawn from active use; it may simply augment the inactive hoards of cash and bank balances.

Likewise in times of unusual optimism it is a neutral, not a deflationary, policy for central banks to contract their credit operations so as to offset the effects of the boom spirit in bringing cash out of hiding and in shifting deposit accounts from the category of idle reserves into that of funds actively pressing on the market for goods. The difficulty here is to identify the situation which calls for restraint.¹¹

An equally difficult question relates to the secular trend of the total volume of member bank deposits. Was the increase in bank credit between 1922 and 1930 too great to be absorbed by the normal increase in the volume of reserves needed to meet the demand for pocket money, service balances, pay rolls, and so on?

¹⁰ The expansion of "savings" deposits will not show in statistics the quantity of bank credit outstanding because it is simultaneous with a tendency toward repayment of bank loans, which leads to cancellation of deposits. Repayment of debts is a way of adjusting one's position to an anticipated fall of prices. The statistical evidence of the operation of the tendency to hoard is in the turnover, but even there it is masked by the much greater fluctuation in bank debits which results from variations in speculative activity.

¹¹ Compare pp. 92-94.

Professor Edie believes that a trend line of 4 per cent per annum is a norm for the growth of need for credit.¹² By applying this criterion to demand deposits alone he shows that for the years 1922-27 the trend of credit growth was approximately that of credit needs, while after the beginning of 1928 deposits fell far below the norm.¹³ However, if this test is applied to bank loans and investments¹⁴ or to net demand plus time deposits (which are the principal offsetting items to loans and investments), it appears that the growth of member bank credit was far more rapid than the growth of the need for credit until the policy of repressing the stock market became effective in 1928 and 1929.

B. M. Anderson argues that the growth of credit was excessive, using detailed comparisons of the growth of credit with the composite indexes of trade and transportation.¹⁵ The argument of the price stabilizationists that prices did not rise is answered by pointing to the advance in technology which would have produced a much sharper decline of prices if there had been no credit inflation; and also to the rise of security prices and of real estate.

The issue cannot be disposed of with finality. The argument from falling prices is wholly inconclusive, for it seems certain that the price level would have fallen in relation to an ideally neutral money. The suggestion that credit should grow with the trend of business is probably inflationary, and in any case cannot be applied

¹² L. D. Edie, *The Banks and Prosperity*, 1931, p. 117.

¹³ Conclusion drawn from chart, *ibid.*, p. 125.

¹⁴ *Ibid.*, chart, p. 124.

¹⁵ "The Goldsborough Bill and the Government Security Purchases of the Federal Reserve Banks," *Chase Economic Bulletin*, 1932, Vol. 12, No. 2. See also "Commodity Price Stabilization A False Goal of Central Bank Policy," *ibid.*, 1929, Vol. 9, No. 3.

merely by a comparison of the growth of trade and the growth of deposits. Bank deposits and bank currency are not identical, though they are statistically indistinguishable. Bank deposits are only partly the money of the country; they are also a medium of investment, and until we know in what proportion bank deposits are held as medium-term investments, rather than as media of exchange, we have no clue to the proper relationship between the growth of deposits and the growth of trade.¹⁶ The line between time deposits and demand deposits clearly does not serve; many demand deposits are probably held as quasi-permanent investments. And even if we knew the relationship, we should have no assurance of stability, for bank deposits and money may change quickly from one category to the other.

In summary: the ideal solution of the credit manager's problem is neutral money—that is, stabilization of the relationship between the supply of currency (including bank deposits) and the demand for currency, meaning by demand for currency not the turnover but the quantity of money and of bank deposits which the country is willing to carry idle in pocket and till money balances, operating funds, and “investment” deposits. Any injection into the currency of funds in excess of this amount means that the public is put in possession of purchasing power in excess of the funds which have been disbursed to the public as costs of production of goods

¹⁶ Equally inconclusive, of course, is the statistical test of the adequacy of cash. The fact that the country had a billion dollars more of cash on Mar. 1, 1932 than on the corresponding date in 1931, is no evidence at all of a relative plethora of cash on the latter date; the excess was of investment rather than currency character.

which are coming on the market, thereby creating a temporary condition of ease in the short-term money markets, a fictitious appearance of abundance of capital for long-term investment, and to a less extent an artificial surplus of funds for consumptive expenditure. Vice versa, contraction of the volume of outstanding currency and bank credit, unless it coincides with a shrinkage in the real demand for cash and deposit balances, will have the opposite effects.

If the amount of purchasing power which the public will keep immobilized in the forms of till and pocket money, working funds, and deposits held as investments were itself stable, the maintenance of neutrality between the money supply on the one hand, and the absorptive capacity of the population on the other hand, would be very simple. In fact, however, the amount of purchasing power which the public is willing to keep immobilized is constantly changing; the task of credit control is to detect these changes and to vary the volume of outstanding Reserve credit so as to offset their effect. There is, however, no simple and dependable technique either for determining the volume of currency which would best meet the needs of the country, or for keeping the outstanding volume at that level.

The quantity of bank credit which a country "needs" is the resultant of a complex of forces. One is the simple growth of population. A second is the growth of per capita wealth and income which carries with it an increased demand for the luxury of an unspent balance. Third, there is a set of business changes which impinge upon the volume of bank balances needed to finance industry. Integration reduces the demand for bank money; specialization increases it. A fourth factor is the

spread among banks of the practice of requiring service balances. Fifth, there are changes in the extent to which bank balances are used as a form of investment.

It seems evident that during the years 1922-29 there was a great change in the factor last mentioned, which reflected itself on the one hand in the enormous growth of time deposits, and on the other hand in an expansion of the investments of the banks. Whenever a bank buys a security and the former security holder takes time deposits in its place, the volume of bank credit is increased statistically, but there is no expansion in the sense which is significant for monetary policy in the ordinary sense of the term. Until we can segregate the investment from the currency element in the bank credit structure, statistics will throw little light on the question whether the flow of funds through the channels of trade has been unduly augmented.

In short, the volume of bank currency which was made available to the American public during the decade of our study cannot be shown to have been either excessive or deficient as measured by the long-run needs of trade, though it was clearly excessive in 1927 and deficient in 1929. The margin of uncertainty is wide and the actual results fall within that margin. There is no evidence that over most of the period the flow of goods from producer to consumer met a return flow of funds which was either unduly contracted or unduly expanded by the creation and liquidation of credit.

However, we can reach a more positive judgment by approaching the question from another angle. Inflation of the currency is not the only risk which inheres in the elasticity of bank credit. There is also the risk that the safety of the banks themselves will be impaired

by too rapid a growth of their liabilities. The whole system of pyramiding a vast array of obligations which, technically or practically, are payable on demand, on a slender base of cash and an even slenderer base in the form of stockholders' equity, placing dependence for solvency on assets which can only be liquidated by transfer or by wholesale destruction of monetary values—this whole system is inherently unstable, and its instability was evidenced in the decade of our study by an unparalleled record of bank insolvencies. This phase of the question is considered in Chapter XVII.

CHAPTER XVII

THE QUALITY OF CREDIT: LIQUIDITY AND SAFETY

In Chapters XII and XIII it was shown that the Federal Reserve system has much less influence than was expected in the direction of a greater use of self-liquidating commercial paper as a method of credit extension by member banks. It was there noted that aside from the fostering of an acceptance market, the record of the Reserve system indicates no consistent interest in this issue. At times it has been given some attention, but at most periods the interest of Reserve authorities has centered in control of the quantity of credit rather than in influencing its quality. It remains to consider whether these facts constitute a serious criticism of Reserve administration. Was there ever any real reason for demanding a revision of the standards maintained by American banks in the matter of liquidity? Was the great increase of security loans and investments a wholesome change?

I. THE BANKER'S VIEWPOINT: LIQUIDITY

From the standpoints of safety for bank depositors and profits for bank stockholders, the increase of security loans and investments has so far been advantageous. During the post-war period, bond investments and security collateral loans have been safer than loans to commercial and agricultural customers, and have greatly facilitated the scattering of risk. One of the greatest risks to any bank, and especially to a small bank, is the danger that the principal industry of its community will

suffer sudden disaster or gradual decay. Against this risk a bank can protect itself only by keeping a considerable share of its resources invested outside its local community—which means either in deposits with outside banks, in securities and security loans, or in acceptances and open market commercial paper. Either policy means investment in the obligations of the large well-known concerns whose credit is so well established that the banker can safely invest without personal contact with or intimate knowledge of the affairs of the firm.

The policy which is most profitable in the experience of a limited term of years, however, is not necessarily the soundest policy for the long run. Profits may be secured by taking undue risks, and favorable conditions may conceal the risk and seem to justify the policy. Moreover, social policy may not necessarily coincide with the interest of stockholders or even with that of the depositors in the banks. Let us examine the question further, first from the standpoint of its effect on the banking structure itself, and finally from the standpoint of the effect of different investment policies on the relative position of different industries and of different sections of the borrowing public.

The whole theory of the necessity of self-liquidating quality in bank loans is unsound. The ancient and orthodox theory of British and American banking holds that bank credit should not be used to finance the long-run capital needs of industry but should be reserved for the temporary or seasonal needs of business.¹ The basis of this tradition is obvious. A bank's funds are the property of its depositors, repayable on demand; hence the

¹ German banking tradition, on the other hand, endorses permanent investment by banks in the businesses which they finance.

bank should make its loans on the security of transactions which are self-liquidating and of short maturity so that it can get possession of its funds quickly if pressed by calls from its depositors. If its funds are locked up in land, plant and equipment, or even in slow-moving inventories, the bank exists only on the sufferance of its depositors. It is potentially insolvent, even though its loans are sure to be paid in the long run.

This doctrine is plausible, but it rests on two assumptions of fact, of which one was probably never justified and the other has now broken down. The first assumption is that fixed capital loans cannot be liquidated in time of need; the second is that the bulk of working capital loans are truly self-liquidating.

Marketability gives liquidity to security investments. In an age when business was typically organized on the basis of individual ownership, partnership, or close corporation, a bank did have to guard against the use of its funds for the purchase of fixed capital investments, in order to avoid a permanent locking up of those funds. The situation, however, has been fundamentally altered by the rise of two widespread practices. The first change referred to is the spread of corporate organization with its incidents of limited liability and flexibility of ownership; the second is the growth of stock and bond markets. Salability gives liquidity to instruments which are inherently lacking in self-liquidating character. Call loans to stock traders, deposits in banks in financial centers, and bond investments give a bank a secondary reserve which, so long as the markets function, can be liquidated easily, and without a loss of customers' goodwill. Such assets are the first resource in time of pres-

sure.² A fixed capital instrument which is readily salable, or a loan based on it, is just as liquid, from the standpoint of the individual bank, as any type of loan which it can make. The creation of such liquidity in capital ownership is the great economic service of the security markets.

With the spread of incorporation and the improvement of facilities for stock and bond trading, both bankers and the authorities who are supervising them have come to recognize this fact. In practice, bond purchases and stock and bond secured loans have long been accepted as good banking practice, though lip service is still paid to the commercial loan and the acceptance as the ideal banking investments.

Marketability of assets, however, does not assure the liquidity of the banks as a group. For it is obvious that no bank can quickly liquidate its call and time collateral loans and its bond holdings unless other banks are ready to take over the load. Securities can be transferred to savers only as savings accumulate, and this process cannot be speeded up. This is the objection generally offered to the acceptance of salability as a sufficient substitute for self-liquidation. As long as banks stand ready to invest in securities and to make security loans, securities will be issued in such quantities as to fill the bank market as well as the savers' market, and if the banks as a whole want to get out from under the load they must wait until individual savings grow to the level established. In practice, no liquidation movement ever

² So far as the call loan is concerned, an exception must be made in the case of city banks whose regular customers include stock exchange houses. Loans to brokers over the counter may have to be taken care of like other customers' loans. The bulk of the call loans, however, are made through the market in an impersonal way, without obligation to renew.

takes many securities out of the banks; it only transfers them from one bank to another. The so-called liquidity is really only shiftability.

Commercial loans also are liquid, if at all, only from the standpoint of the individual bank, not from that of the system. This fact is generally overlooked by opponents of security financing on the part of the banks. From the standpoint of the individual bank, over-the-counter loans, which make up the bulk of commercial paper, are much harder to liquidate than are open market investments. In a very large proportion of cases they cannot be called when due, even though the borrowers are perfectly sound. The borrowers are the banks' principal customers and to a large extent are the source, directly or indirectly, of its deposits. Even though they may "clean up" periodically at one bank, they are likely to do so by borrowing at some other bank. In any case they cannot be required to liquidate their loans unless the seasonal character of the business makes it convenient. For a bank to cut off the line of credit of any considerable number of its solvent customers would be suicidal.

On the other hand, open market commercial paper, like bonds and call loans, is an impersonal asset. No bank is required to accept renewal of it to avoid loss of customers' good-will. Yet from the standpoint of the whole credit system, open market commercial paper is no more liquid than is any other type of loan. Packer loans, for instance, one of the most liquid types of paper, can be paid off from the proceeds of the sale of packing-house products, which turn over very rapidly; but new loans must be secured to replace them if the packer is to go on buying cattle. Exporters can pay

off cotton loans as their shipments come into port, but unless they can secure credits elsewhere they must stop buying cotton.

In short, no major fraction of the underlying transactions which are represented by short-time credit operations of all types could be liquidated except at the cost of a breakdown of the whole industrial order. The vast streams of raw materials, goods in process, and finished goods in various stages of marketing are only nominally owned by those who have legal title to them. Their real owners are to a large extent the depositors in the banks. There is no way in which to liquidate the debtor-creditor relationship between the business public who are the nominal owners of these goods on the one hand, and the owners of bank balances on the other hand—except by the slow process of selling investments to bank depositors, or the still slower process of selling stocks and bonds to investors to refund the bank loans.*

In the field of "commercial" lending, just as in the capital market, a general liquidation is impossible. If pressure on the banks to pay off their depositors is at all general, the system breaks down, or relief must come from outside the group—that is, under the old banking system, from abroad; under the present system, either from abroad or from the Federal Reserve Banks. Aid from abroad means gold imports; aid from within means expansion of Federal Reserve assets, either through investments made on the initiative of the Reserve Banks, or through loans made on the initiative of

* Another possibility, but one which so far has been of little aid, is an expansion of private lending—the so-called "bootleg" loans. Transfer of short-time loans from banks to their depositors results in a cancellation of deposits just as does the sale of investments by the banks. Compare pp. 156-57.

the member banks. Such an expansion creates new reserves on the basis of which member banks as a group can expand their deposit liabilities in about a ten-to-one ratio, or can pay out cash in a one-to-one ratio.

The only really self-liquidating body of credit is that fraction of the commercial paper which represents the seasonal and occasional excess of working capital needs at the peak above those of the slack season. Therefore, a rigid interpretation of the doctrine of liquidity would require all business men to finance themselves through the security market or through private investment up to the point where their borrowings would all be cleaned up during part of the year—not by shifting loans but by actual liquidation. It would also forbid banks to carry any large volume of the securities either as collateral for loans or as investments. Such a system could be operated, and would have the advantage that it would be much less susceptible to shock than is the present system of carrying demand liabilities against what are really long-time assets. Even this drastic measure, however, would not make it possible for any large proportion of the remaining depositors to get their funds out of the banks simultaneously. For, as one business liquidates its seasonal excess, another is coming into its peak and must be taken care of; the combined mass of seasonal advances is almost as rigid as is the mass of bank credit taken as a whole. There is no way to liquidate any large proportion of the outstanding credit without liquidating the whole modern organization of business.

We conclude that the balance of advantages and disadvantages from the drift of the commercial banks toward investment banking does not depend on the rela-

tive liquidity of securities and of commercial paper. Either type of lending gives individual liquidity to the individual bank, if its credit analysis is good. Neither type gives liquidity in the face of calls which involve the banks as a whole. And as between individual banks, bonds and call loans are more shiftable than customers' paper.

The real danger from the increase in banks' holdings of securities is in its effect, not on the character of the assets, but on the volume of the liabilities. For banks instead of investors to absorb securities means that investors must hold bank deposits instead of securities. If securities pass from the hands of private investors into the hands of banks, and the proceeds are not used to liquidate some other type of bank loan, the result is that private individuals must carry a larger proportion of their investments in the form of time and demand deposits in the banks. The notable expansion of time deposits during the decade which ended in 1929 was the counterpart of the expansion of bank investments in securities—except in so far as the latter were issued in order to obtain working capital formerly obtained through bank loans. When the banking system expands its assets and its liabilities by taking in securities and giving out deposit credits the pyramid which must be supported by a limited quantity of gold is expanded, and, more important, the economic area which is exposed to the risk of a sudden pressure for liquidation is enlarged.

A general liquidation of securities and a corresponding cancellation of deposits, such as occurred in the last half of 1931,⁴ does not necessarily involve a corresponding

⁴For reporting member banks total loans and investments shrunk from 22,942 million dollars in April 1931 to 20,748 million in December, most of the shrinkage occurring after September.

withdrawal of purchasing power from the commodity markets, with its accompaniment of falling prices and unemployment. In large part it is merely a transfer of investments to those who formerly held bank deposits. But this process also aggravates depression because it creates doubt as to the safety of the banks. For such a liquidation is certain to involve a lowering of the quality of bank investments, the items which are sold being safer and more liquid on the average than those which remain in the bank portfolios. If it were not for this impairment of the quality of the banks' assets, the simplification of the banking structure by the elimination of these deposits would be a gain. The smaller the volume of demand indebtedness that hangs over the markets the better. The unfortunate thing about the growth of the bank security investments is the increase of this body of obligations, which is sure to be called for payment whenever there is a loss of confidence either in the national currency or in the solvency of individual banks.

The preceding pages were written before the development, late in 1931, of the acute strain in the bond market which resulted from a widespread effort on the part of the banks to get their assets into extremely liquid form. This experience emphasizes what is said in the text as to the impossibility of a general liquidation; and reveals in a striking way the risks inherent in our custom of giving to individuals rights to immediate cash payment out of a body of assets which can in no way be converted into cash. It suggests even more strongly than did previous experience that the increasing volume of bank security holdings is to be deplored simply because it involves an expansion of the volume of bank deposits (whether of time or demand deposits makes little dif-

ference in the risk), and consequently a greater exposure to the hazard of the panics which always ensue from attempts to liquidate. The root difficulty is that the whole banking system of the world is organized on a basis of offsetting what are nominally demand or short-time obligations against what are nominally short-time claims on industry, or salable long-time claims. Because the assets are not and cannot be truly liquid the banks cannot in fact meet their obligations to pay off any considerable proportion of their depositors on demand, or for that matter on three months' notice.

The collapse of the credit of the central banks and of the governments of numerous European countries, as they have successively come to the rescue of their banking systems and of one another, emphasizes the hazards inherent in the task of maintaining the redeemability of the present volume of demand obligations. When the tide is setting toward an expansion of bank credit, as it was in the years before 1929, the risks of the situation are concealed, but the pyramid can never be contracted without disaster.

II. THE BORROWER'S VIEWPOINT: VESTED INTERESTS

The drift of investment securities into the banks stimulates the organization of business in large units. Looking at the question of bank lending policy from the borrowers' standpoint, we must distinguish between the standpoint of a big business which has a choice between security issuance and short-time borrowing, and that of a small business which either cannot issue securities at all or must issue them in a local market to buyers who can carry them without aid from the banks.

Large borrowers who can issue securities which will have standing in the open market gain an advantage by

having the banks support that market. The fact that a bond is good bank collateral is a strong selling point with the average investor, even though he may be buying outright. For underwriting operations it is essential. Stock issues also are much more marketable if banks will lend on them.

From the standpoint of the small borrower, the trend of bank practice toward collateral loans and bond investments is correspondingly disadvantageous. It enables large concerns to compete with him for the capital of his local bank, while he is not enabled to compete with them for the capital of the distant bank. His only access to the open capital market is by an indirect and expensive route, through the medium of trade credit extended to him by wholesalers and manufacturers. This advantage of the big concern in raising capital is one important reason for the steadily increasing centralization of industry and distribution, and a primary source of the popular opposition to the concentration of our banking resources in New York. It is probably the most important issue in the whole controversy.

Two points must be noted in regard to it. In the first place, the little man's disadvantage is just as great if banks stick closely to self-liquidating paper, but buy bank acceptances and open market commercial paper, as it is if they buy bonds, make call loans, or deposit their funds with New York correspondents. The small man is at a disadvantage in the open market because his credit is not well enough known to be acceptable. It makes no difference whether the open market deals in investment instruments or in commercial paper; the fact that banks put funds into it gives the large well-known firm a definite advantage.

Second, it may well be questioned whether any type of business has a vested interest in the maintenance of the existing traditions of sound banking. The rule that banks should invest in self-liquidating paper originated in the interest of the banks' depositors in having their funds so invested that the bank could get them out quickly. When safety ceased to demand investment in so-called self-liquidating paper, the old tradition was maintained in large part in the interest of borrowers who found it advantageous to borrow in the old way. There is widespread insistence that "commercial" borrowers have some sort of prescriptive right to have the funds of the banks safeguarded for their use as against other bidders.

To me this idea seems quite baseless. The vested interests which have grown up around an old system⁵ always constitute an obstacle in the way of any far-reaching change, and judgments will always differ as to the amount of consideration to be given to them. The case for maintenance of the old system of lending on short-term commercial paper to the exclusion of open market investment is at bottom the same as the case for protection of the small town merchant against chain stores and mail-order houses, of hand-workers against machines, and of the country bank against branch banking.

My predilections are strongly against the protection of the established way of doing things in the face of the competition of newer ways, but I have no disposition to argue the case at this point with those who think differently. The important thing is that the issue shall be recognized as one of protection of small-scale busi-

⁵ Including the vested interests of theorists in the ideas which they hold.

ness against big business and threshed out on that basis as a matter of social policy, not camouflaged as an issue of "sound" against "unsound" banking.

III. THE DEPOSITOR'S VIEWPOINT: BANK FAILURES

The number of bank failures in the United States was unusually large throughout the period covered by this study. In the decade 1922-31 the total number of bank insolvencies was 8,784, or 29 per cent of the number of banks in operation at the beginning of the period. The capital of the banks which failed between June 30, 1921 and June 30, 1931 amounted to 13 per cent of the total at the beginning of the period, or 10 per cent of the total at the end.

The fact that the percentage of banks failing was much higher than the proportion of total bank capital involved in the failures makes it obvious that the failures were chiefly those of small banks. Toward the end of the period, however, under the influence of the severe depression, the larger banks became involved. For the five-year period 1922-26, the average capital of the banks which failed was about \$36,000. In 1929 the average was \$50,000; in 1930, \$83,000; in 1931, \$94,000.⁶

The major part of the failures were among non-member banks, as is shown by the table on page 341. The ratio of the deposits of the member banks which failed to those of all failed banks, ranged from 25 per cent in 1929 to 54 per cent in 1930, and averaged 39 per cent for the whole period.⁷ In view of the fact that the member banks had around 70 per cent of the total capital and 60 per cent of the deposits it is clear that the member

⁶ Year ended June 30.

⁷ For 1922-29, 30 per cent.

banks on the whole came through much better than the non-member. This is due partly to the fact that the member bank list comprises a much greater proportion of the large city banks than of the total, since it is among the large banks that the mortality has been lowest. But even for groups of banks of comparable size, the ratio of losses

BANKS SUSPENDED, 1922-31^a

Year	Number		Deposits (In thousands of dollars)	
	Member	Non-member	Member	Non-member
1922	57	297	24,243	86,478
1923	124	524	51,228	137,473
1924	159	617	74,469	138,869
1925	146	466	67,264	105,636
1926	160	796	68,812	203,676
1927	124	538	66,336	127,555
1928	73	418	42,240	96,402
1929	81	561	57,135	177,397
1930	187	1,158	380,440	484,275
1931	517	1,781	733,528	957,982

^a *Federal Reserve Bulletin*, 1932, Vol. 18, p. 360.

among member banks has been much lower than among non-members.

"Causes" of bank failures may advantageously be grouped into three general categories: First, there is the immediately preceding event which precipitates a suspension of payments, such as the failure of a correspondent bank, a gradual withdrawal of deposits, a run, a defalcation, losses on securities, bankruptcy of clients, and so on. Second, there are certain general factors, chief-

ly economic, which have been undermining the position of many banks, especially the small country banks. Among these factors are the advent of the automobile, which has greatly widened the natural trade area of the larger country towns and thereby taken away the natural clientele of banks in smaller communities; the relatively unprosperous state of agriculture during the whole decade, which has been disastrous for many banks which had specialized in financing farmers either directly or indirectly; the par collection policy of the Federal Reserve Board which cut heavily into the incomes of the small country banks; and during 1930 and 1931, the collapse of security and commodity values and the widespread unemployment.

We shall not discuss in detail the causes which fall in these two categories. The risk of such losses is inherent in a capitalistic economic system, and their occurrence does not necessarily indicate bad banking organization or administration, except to the extent that wiser policies might have been successful in maintaining a greater degree of business stability—a question which has been discussed in preceding parts of this volume, especially in Chapters V, X, and XI.

We are more interested here in a third group of factors, which can be called causes only in a negative sense: that is, the lack of protective features adequate to enable the banking system to meet these severe shocks without widespread insolvency. Proposed general safeguards of this kind include (a) machinery for enforcement of more rigid standards of bank lending and investment policy, (b) greater size of banks and better diversification of investment, (c) provision for more ample support for weak banks, either from other banks or from the govern-

ment, and (d) requirement of a higher proportion of stockholders' equity to the deposit and other liabilities of the banks.

On the first point, the requirement of better banking, little need be said. Neither the Reserve system nor the Comptroller of the Currency can reasonably be expected to exercise such a degree of supervision over the banks' lending policies as to avert many of those failures which are due to unwise extension of credit to over-the-counter borrowers. Nor can the judgment of supervisory officials with regard to safety of investments be substituted, except in extreme cases, for that of responsible officials. Bad banking has been responsible for a great many failures, but it does not account for the great increase of failures over pre-war years, nor does it seem practicable to eliminate it by closer supervision on the part of Reserve authorities.

The second point raises the issue of branch banking. Undoubtedly a nation-wide system of branch banking would make possible a better diversification of that large fraction of the banks' assets which consists of loans over the counter to customers. This would automatically reduce the necessity for so great emphasis on investments with the attendant risk of loss from changes in the prices of securities. Better diversification of risk is the strongest argument for branch banking.

The third suggestion, however, points in the opposite direction. The fact that banks, until recently, have been left to sink or swim, is one of the outstanding differences between the banking organization of the United States and that of most other countries. This is not the only important country in which banks become insolvent; it is the only one in which they are allowed to fail. Else-

where banks which cannot maintain their solvency are either amalgamated with stronger banks or else supported by the government. They must be supported because the maintenance of their solvency is essential to the maintenance of economic stability. The individual banks are so big that if they collapse they carry the whole national economic structure down with them. Hence over half the world banking is actually organized on the basis of private ownership of profits and socialization of losses. In America, because of the smaller size of our individual banks in comparison with the total financial structure, we can have a bank failure without a general crisis. That we do not have to underwrite bank deposits is the most cogent argument against nation-wide branch banking. It is not a wholesome situation that the public must assume responsibility for the results of policies which it does not control.

However, we are already losing our advantage. As the weaknesses which have caused the innumerable failures of small banks crop out among the larger banks, it ceases to be feasible to allow bankruptcy to renovate the situation. The Reconstruction Finance Corporation is a recognition of the fact that in America, as elsewhere, the private business of banking, if organized on a large scale, is indissolubly tied up with public interest in maintaining a uniform means of payment which will command the confidence of the community.

Our fourth suggested remedy, the requirement of more ample capital and surplus in proportion to deposits, has received much less attention than the others,⁸ though action along this line offers great promise of usefulness. The rate of failures is only in part a resultant of the

⁸ See, however, F. Somary, *Bankpolitik*, 1930, pp. 11-14.

rates of shrinkage of assets and the adequacy of the organization for distributing the risk. It is also a function of the size of the margin provided for absorbing losses before they impair solvency; in other words, of the extent to which the bank does business with its own funds compared with the size of its liability to depositors. No important division of business works on so thin an equity as is customary in financial institutions—including banks, insurance companies, building and loan associations, and investment houses. And in none of these others is the thinness of the equity as serious as in commercial banking—both because a bank's obligations are more exclusively in the form of demand obligations, and because the consequences of its failure are more serious than is the case with most financial institutions.

The ratio of stock and surplus to total assets of the banks was decreasing before the war and this tendency was accelerated by the great expansion of bank operations and the high level of bank profits during the war. The accompanying table shows, for the period covered by our study and for certain pre-war years, the ratio of stockholders' equity to the total volume of resources at the disposal of the banks. This includes not only national

Year	Percentage	Year	Percentage
1873	23.7	1923	12.6
1883	23.1	1924	12.3
1893	24.7	1925	11.9
1898	20.0	1926	12.0
1903	18.1	1927	12.1
1908	18.0	1928	12.4
1913	16.9	1929	11.6
1918	12.0	1930	13.5
1921	12.8	1931	13.5
1922	13.0		

banks but state banks, savings banks, and loan and trust companies. The showing of the national banks alone is similar, the ratio for 1873 being 35.8 per cent; for 1898, 24.0 per cent; for 1913, 18.5 per cent; for 1923, 13.7 per cent; and for 1929, 13.1 per cent.

This development is in no way peculiar to American banking. The ratio of stockholders' investment to total resources of the banks was materially reduced during the war period. After the war, as the table on page 347 shows, pre-war margins of safety were nowhere restored; indeed in many cases the situation grew worse.

As was indicated in Chapter XVI, the current depression may or may not have started as a necessary reaction from a distortion of the productive pattern of society engendered by an over-liberal dose of new purchasing power. The current trend of cycle theorizing points to that explanation, and statistical information is not adequate to test it. But whether this or some other explanation is to be preferred, it is clear that the extraordinary severity and duration of the depression is the reflection of a debtor-creditor position, and especially a banking position, which was top-heavy.

While the immediate difficulty appeared to be the lack of cash reserves or of assets that could be converted quickly into cash, the main difficulty was not in the reserves. Cash reserves the world over have for a century been too small to make possible a general liquidation; to double them the world over would not help much. Reserves are always adequate so long as depositors have confidence in their banks, and never adequate when confidence is lost. The basic difficulty in the banking structure of the world is that the custody of unspent balances of purchasing power, which of all forms of business ought

AGGREGATE CAPITAL, SURPLUS, AND UNDIVIDED PROFITS OF
PRINCIPAL COMMERCIAL BANKS AS PERCENTAGE OF
TOTAL ASSETS, BY COUNTRIES^a

Country	1913	1919	1929
Argentina.....	26.7	13.9 ^b	11.9
Austria.....	21.0	9.0	13.7
Belgium.....	20.9	14.3 ^c	22.2
Brazil.....	19.9	9.8 ^c	10.8
Canada.....	15.7	8.8	9.1
Denmark.....	23.5	13.9	15.7
England and Wales....	9.0	5.2	6.6
Finland.....	19.2	18.5	17.7
France.....	16.2	7.9	8.0
Germany.....	25.0	6.7	8.1
Greece.....	31.4 ^d	11.6	13.8
Hungary.....	16.8	...	15.3
Ireland.....	12.8	6.4	9.3
Italy.....	22.7	8.4	12.0
Netherlands.....	31.3	22.2	21.5
Peru.....	18.5	9.6 ^e	20.0 ^e
Scotland.....	11.6	5.8	9.5
Sweden.....	23.0	14.7	15.3
Switzerland.....	15.9	13.1	12.8
Union of South Africa..	12.9	6.8	9.9

^a Computed from figures given in League of Nations Pub. 1931, II. A. 26, *Memorandum on Commercial Banks 1913-29*

^b For 1921, 1919 not available.

^c For 1920, 1919 not available.

^d For 1914, 1913 not available.

^e For 1928, last year available.

to be conducted on lines affording the greatest assurance of ultimate safety (since immediate liquidity is impossible), has been organized to exploit to the fullest the profits of "trading on the equity." A banker who as a matter of routine demands a two-to-one ratio of cur-

rent assets to current debt, himself presents a balance sheet showing 85 or 90 per cent of his current assets covered by his demand and other short-term obligations. Consequently a very small shrinkage of security values or freezing up of loans wipes out the stockholders' equity and impairs the deposits. And of course the knowledge that this is true makes depositors rightly uneasy and forces them in self-defense to give the bank no benefit of doubt.

The inadequacy of stockholders' equities to provide a buffer against the slightest shrinkage of the assets is not directly an outgrowth of the administrative policies which the Federal Reserve system has followed, for the law confers on the Reserve system and the Reserve Banks no authority to require stockholders to provide greater equities than have actually been required. Federal Reserve policy, therefore, can be held responsible for the weakness of the banking structure only in so far as we can fairly require Federal Reserve authorities to look ahead and recommend remedial legislation before the need of it becomes apparent to all. The responsibility of the Reserve system in this matter must be shared with legislators, and with all serious students of public affairs; for we all failed to detect in time of prosperity the inadequacy of our precautions against a time of adversity.

APPENDICES

APPENDIX A

STATISTICAL DATA

I. RESERVE BANK CREDIT AND FACTORS IN CHANGES, JAN. 1, 1922 TO JUNE 1, 1932^a (Monthly averages, in millions of dollars)

Month	Reserve Bank Credit Outstanding					Factors of Decrease		Factors of Increase			
	Bills Discounted	Bills Bought	United States Securities	Other Reserve Bank Credit	Total	Monetary Gold Stock	Treasury Currency (Adjusted)	Money in Circulation	Member Bank Reserve Balances	Non-Member Deposits, etc.	Unexpended Capital Funds
1922:											
Jan.	962	98	238	28	1,326	3,672	1,551	4,527	1,707	29	286
Feb.	769	88	357	19	1,233	3,704	1,521	4,451	1,689	34	284
Mar.	638	92	459	18	1,207	3,736	1,576	4,483	1,711	39	286
April	572	93	520	25	1,210	3,756	1,572	4,482	1,733	40	283
May	479	103	603	23	1,208	3,768	1,576	4,450	1,783	37	282
June	437	136	591	28	1,192	3,776	1,600	4,429	1,820	34	285
July	425	153	547	45	1,170	3,803	1,595	4,443	1,812	28	285
Aug.	396	159	497	50	1,102	3,840	1,613	4,448	1,799	25	283
Sept.	417	212	486	65	1,180	3,860	1,630	4,552	1,811	23	284
Oct.	486	252	448	60	1,246	3,884	1,657	4,643	1,836	21	287
Nov.	623	260	325	57	1,265	3,896	1,650	4,671	1,825	27	288
Dec.	660	259	380	78	1,377	3,917	1,690	4,827	1,840	28	289
1923:											
Jan.	547	218	421	63	1,249	3,945	1,724	4,679	1,918	46	275
Feb.	608	190	356	51	1,205	3,960	1,709	4,672	1,901	25	276
Mar.	628	234	316	50	1,228	3,966	1,690	4,713	1,873	22	276
April	658	272	229	55	1,214	3,975	1,711	4,731	1,869	21	279
May	705	271	193	53	1,222	3,993	1,740	4,764	1,874	36	281
June	741	224	153	60	1,178	4,040	1,738	4,779	1,867	28	282
July	834	186	97	62	1,179	4,061	1,743	4,812	1,867	24	280
Aug.	809	175	90	53	1,127	4,097	1,747	4,833	1,835	22	281
Sept.	845	174	102	63	1,184	4,123	1,745	4,901	1,848	22	281
Oct.	873	185	91	55	1,204	4,155	1,753	4,941	1,864	23	284
Nov.	799	265	83	57	1,204	4,182	1,757	4,953	1,875	31	284
Dec.	771	324	106	59	1,260	4,226	1,771	5,071	1,882	22	282

352 *FEDERAL RESERVE CREDIT POLICIES*

I. RESERVE BANK CREDIT AND FACTORS IN CHANGES, JAN. 1, 1922 TO JUNE 1, 1932^a (Monthly averages, in millions of dollars)

Month	Reserve Bank Credit Outstanding					Factors of Decrease		Factors of Increase			
	Bills Discounted	Bills Bought	United States Securities	Other Reserve Bank Credit	Total	Monetary Gold Stock	Treasury Currency (Adjusted)	Money in Circulation	Member Bank Reserve Balances	Non-Member Deposits, etc.	Unexpended Capital Funds
1924:											
Jan.	574	300	118	49	1,041	4,266	1,750	4,847	1,911	25	274
Feb.	514	273	135	33	955	4,302	1,759	4,832	1,892	22	270
Mar.	476	228	244	42	990	4,340	1,747	4,870	1,915	22	270
April	489	170	274	48	981	4,383	1,720	4,886	1,905	23	270
May	433	80	324	42	879	4,433	1,766	4,866	1,922	24	266
June	370	50	416	50	886	4,471	1,759	4,830	2,001	21	264
July	315	44	467	53	879	4,503	1,763	4,810	2,046	28	261
Aug.	268	30	539	44	881	4,516	1,763	4,800	2,072	33	255
Sept.	262	92	575	54	983	4,515	1,763	4,853	2,120	31	257
Oct.	240	180	585	52	1,057	4,506	1,755	4,891	2,141	27	259
Nov.	228	268	588	51	1,135	4,517	1,771	4,970	2,164	30	259
Dec.	301	358	554	75	1,288	4,507	1,768	5,088	2,182	32	261
1925:											
Jan.	267	329	464	65	1,125	4,468	1,765	4,863	2,194	43	258
Feb.	340	314	384	56	1,094	4,392	1,778	4,805	2,159	42	258
Mar.	390	298	376	58	1,122	4,340	1,782	4,814	2,137	30	263
April	403	287	355	65	1,110	4,340	1,769	4,803	2,123	27	266
May	397	279	361	63	1,100	4,353	1,762	4,791	2,132	28	264
June	437	263	345	73	1,118	4,360	1,744	4,790	2,141	25	266
July	480	231	338	69	1,118	4,361	1,764	4,794	2,160	27	262
Aug.	545	205	329	64	1,143	4,372	1,742	4,817	2,151	25	264
Sept.	594	226	335	72	1,227	4,386	1,749	4,908	2,161	26	267
Oct.	619	298	328	76	1,321	4,391	1,737	4,945	2,203	30	271
Nov.	597	325	332	71	1,352	4,407	1,735	4,960	2,221	41	272
Dec.	688	369	359	91	1,507	4,397	1,740	5,119	2,219	32	274
1926:											
Jan.	520	324	368	67	1,279	4,407	1,744	4,891	2,236	30	273
Feb.	526	305	335	52	1,218	4,425	1,719	4,854	2,208	26	274
Mar.	557	268	336	55	1,216	4,444	1,707	4,864	2,198	27	278
April	537	234	371	62	1,204	4,448	1,722	4,882	2,183	26	283
May	511	232	398	59	1,200	4,434	1,744	4,871	2,199	26	282
June	473	243	408	61	1,185	4,438	1,771	4,881	2,206	23	284

I. RESERVE BANK CREDIT AND FACTORS IN CHANGES, JAN. 1, 1922 TO JUNE 1, 1932^a
(Monthly averages, in millions of dollars)

Month	Reserve Bank Credit Outstanding					Factors of Decrease		Factors of Increase			
	Bills Discounted	Bills Bought	United States Securities	Other Reserve Bank Credit	Total	Monetary Gold Stock	Treasury Currency (Adjusted)	Money in Circulation	Member Bank Reserve Balances	Non-Member Deposits, etc.	Unexpended Capital Funds
July	549	230	380	62	1,221	4,460	1,753	4,916	2,212	25	281
Aug.	555	245	353	50	1,203	4,467	1,755	4,912	2,201	27	285
Sept.	640	265	316	57	1,278	4,471	1,750	4,969	2,211	30	289
Oct.	663	295	306	58	1,322	4,472	1,746	5,001	2,219	27	293
Nov.	615	348	302	53	1,318	4,477	1,755	5,005	2,214	36	295
Dec.	668	385	322	70	1,445	4,481	1,749	5,131	2,218	32	294
1927:											
Jan.	481	343	310	52	1,186	4,527	1,760	4,903	2,243	33	294
Feb.	393	304	307	39	1,043	4,576	1,757	4,843	2,212	26	295
Mar.	425	253	345	32	1,055	4,595	1,767	4,856	2,240	23	298
April	447	248	341	51	1,087	4,601	1,761	4,879	2,248	23	299
May	473	233	291	44	1,041	4,651	1,768	4,860	2,262	39	299
June	429	205	398	49	1,081	4,606	1,777	4,831	2,301	34	298
July	454	190	381	90	1,115	4,575	1,780	4,851	2,289	33	297
Aug.	409	173	439	72	1,093	4,585	1,780	4,849	2,283	30	296
Sept.	422	216	501	48	1,187	4,584	1,776	4,917	2,300	30	300
Oct.	424	282	506	42	1,254	4,566	1,776	4,934	2,326	34	302
Nov.	415	336	579	47	1,377	4,490	1,790	4,936	2,373	44	304
Dec.	529	378	606	55	1,568	4,416	1,796	5,048	2,399	27	306
1928:											
Jan.	465	373	512	38	1,388	4,377	1,778	4,785	2,426	27	305
Feb.	471	360	406	27	1,264	4,373	1,776	4,709	2,368	26	310
Mar.	513	343	415	24	1,295	4,335	1,781	4,710	2,365	24	312
April	661	358	351	35	1,405	4,287	1,778	4,730	2,396	27	317
May	836	349	257	30	1,472	4,207	1,779	4,722	2,388	27	321
June	1,019	244	232	36	1,531	4,119	1,791	4,736	2,355	28	322
July	1,090	185	213	43	1,531	4,113	1,782	4,746	2,324	30	326
Aug.	1,061	178	210	36	1,485	4,118	1,774	4,743	2,274	28	332
Sept.	1,064	226	240	51	1,581	4,125	1,787	4,804	2,314	38	337
Oct.	975	368	237	41	1,621	4,133	1,786	4,836	2,332	30	342
Nov.	897	471	238	47	1,653	4,151	1,787	4,860	2,352	32	347
Dec.	1,013	483	263	65	1,824	4,142	1,790	5,008	2,367	29	352

354 *FEDERAL RESERVE CREDIT POLICIES*

I. RESERVE BANK CREDIT AND FACTORS IN CHANGES, JAN. 1, 1922 TO JUNE 1, 1932^a (Monthly averages, in millions of dollars)

Month	Reserve Bank Credit Outstanding					Factors of Decrease		Factors of Increase			
	Bills Discounted	Bills Bought	United States Securities	Other Reserve Bank Credit	Total	Monetary Gold Stock	Treasury Currency (Adjusted)	Money in Circulation	Member Bank Reserve Balances	Non-Member Deposits, etc.	Unexpended Capital Funds
1929:											
Jan.	859	473	229	52	1,613	4,115	1,789	4,748	2,387	31	351
Feb.	889	385	184	44	1,502	4,143	1,784	4,686	2,357	29	357
Mar.	969	265	197	50	1,481	4,166	1,791	4,709	2,337	31	361
April	1,004	156	165	52	1,377	4,226	1,785	4,679	2,308	35	366
May	956	145	153	49	1,303	4,292	1,787	4,684	2,296	32	370
June	978	99	179	61	1,317	4,311	1,779	4,687	2,314	30	376
July	1,096	75	147	62	1,380	4,335	1,790	4,764	2,334	31	376
Aug.	1,043	124	155	54	1,376	4,351	1,781	4,777	2,322	27	382
Sept.	969	229	165	64	1,427	4,368	1,766	4,811	2,335	28	387
Oct.	885	337	154	74	1,450	4,381	1,785	4,810	2,386	28	392
Nov.	953	296	315	67	1,631	4,374	1,789	4,845	2,521	33	395
Dec.	803	320	446	74	1,643	4,324	1,797	4,943	2,395	27	399
1930:											
Jan.	501	314	485	57	1,357	4,283	1,784	4,652	2,349	29	394
Feb.	378	285	480	38	1,181	4,317	1,781	4,554	2,305	27	393
Mar.	274	246	540	35	1,095	4,394	1,797	4,532	2,330	27	397
April	231	266	530	45	1,072	4,443	1,781	4,518	2,350	28	400
May	247	182	529	38	996	4,505	1,779	4,497	2,356	29	398
June	251	141	571	37	1,000	4,528	1,775	4,489	2,392	27	395
July	226	154	583	40	1,003	4,532	1,789	4,483	2,417	35	389
Aug.	214	153	599	32	998	4,496	1,787	4,476	2,392	28	385
Sept.	189	197	597	33	1,016	4,503	1,785	4,493	2,397	26	390
Oct.	196	185	602	37	1,020	4,520	1,787	4,501	2,407	27	392
Nov.	221	184	599	29	1,033	4,553	1,793	4,528	2,433	30	388
Dec.	338	257	644	34	1,273	4,583	1,793	4,823	2,415	27	384
1931:											
Jan.	253	206	647	23	1,129	4,622	1,784	4,695	2,433	28	379
Feb.	216	102	603	15	936	4,656	1,780	4,598	2,370	25	379
Mar.	176	123	604	18	921	4,682	1,778	4,590	2,386	24	381
April	155	173	600	24	952	4,711	1,770	4,647	2,376	27	383
May	163	144	599	20	926	4,767	1,783	4,679	2,387	28	382

I. RESERVE BANK CREDIT AND FACTORS IN CHANGES, JAN. 1, 1922 TO JUNE 1, 1932^a
(Monthly averages, in millions of dollars)

Month	Reserve Bank Credit Outstanding					Factors of Decrease		Factors of Increase			
	Bills Discounted	Bills Bought	United States Securities	Other Reserve Bank Credit	Total	Monetary Gold Stock	Treasury Currency (Adjusted)	Money in Circulation	Member Bank Reserve Balances	Non-Member Deposits, etc.	Unexpended Capital Funds
June	188	121	610	26	945	4,865	1,759	4,750	2,404	35	380
July	169	79	674	32	954	4,958	1,784	4,836	2,407	83	370
Aug.	222	135	712	38	1,107	4,975	1,764	4,947	2,345	187	367
Sept.	280	259	736	38	1,313	4,948	1,768	5,133	2,333	199	364
Oct.	613	692	733	50	2,088	4,447	1,768	5,478	2,256	208	361
Nov.	695	560	727	53	2,035	4,363	1,766	5,518	2,118	171	357
Dec.	774	340	777	59	1,950	4,450	1,782	5,611	2,069	144	358
1932:											
Jan.	828	221	759	57	1,865	4,452	1,773	5,645	1,979	113	353
Feb.	848	151	743	43	1,785	3,384	1,787	5,627	1,907	73	349
Mar.	714	105	809	24	1,652	4,372	1,792	5,531	1,899	37	349
April	605	52	1,014	23	1,694	4,381	1,789	5,452	1,996	63	353

^a Compiled from *Annual Report of the Federal Reserve Board*, 1930, pp. 32-34, and *Federal Reserve Bulletins* for 1932.

II. GOLD IMPORTS INTO AND EXPORTS FROM

(In millions)

Country	1922		1923		1924		1925	
	Im-ports	Ex-ports	Im-ports	Ex-ports	Im-ports	Ex-ports	Im-ports	Ex-ports
France.....	27	—	19	3	24	—	7	1
Germany.....	—	—	50	—	5	20	—	68
Great Britain.....	122	—	150	—	131	12	49	6
Netherlands.....	10	—	13	—	51	1	10	4
Sweden.....	33	—	—	—	7	2	—	1
Canada.....	10	22	49	2	41	3	33	46
Central America.....	4	—	2	—	2	—	2	2
Mexico.....	6	4	7	5	5	4	5	9
Argentina.....	—	—	5	—	22	—	—	8
Brazil.....	—	—	—	—	—	—	—	—
Chile.....	—	—	—	—	—	—	—	—
Colombia.....	7	1	4	1	2	—	2	3
Ecuador.....	—	—	1	—	1	—	1	—
Peru.....	2	—	2	—	3	—	2	—
Venezuela.....	1	—	1	—	—	1	—	3
British Oceania.....	4	—	2	—	3	—	—	27
British India.....	—	4	—	15	—	11	—	59
China.....	9	—	6	—	5	—	—	1
Hongkong.....	—	4	—	2	2	4	—	12
Dutch East Indies....	2	—	2	—	2	—	2	1
Japan.....	—	—	—	—	—	—	11	—
Philippine Islands....	1	—	2	—	5	1	2	—
All Other ^b	37	2	8	2	9	3	2	12
TOTAL.....	275	37	323	29	320	62	128	263

* Compiled from *Annual Reports of the Federal Reserve Board*. "All Other" may

^b Known items of \$4,500,000 or more included in "All Other" are as follows (in Uruguay, 8. 1931: Uruguay, 6. Exports: 1925: Straits Settlements, 7. 1927: Poland Danzig, 5; Switzerland, 10. 1931: Belgium, 16; Italy, 5; Portugal, 2; Switzerland, 20.

THE UNITED STATES, BY COUNTRIES, 1922-31^a
of dollars)

1926		1927		1928		1929		1930		1931	
Im-ports	Ex-ports	Im-ports	Ex-ports	Im-ports	Ex-ports	Im-ports	Ex-ports	Im-ports	Ex-ports	Im-ports	Ex-ports
—	—	21	10	—	308	—	65	—	74	19	364
—	48	—	14	—	29	47	2	—	—	37	1
1	—	39	9	38	33	62	21	—	—	7	—
—	—	15	8	—	4	—	—	—	—	—	50
—	—	—	1	—	—	—	1	1	—	6	—
82	42	64	30	102	23	74	—	44	37	81	—
2	4	1	—	1	—	1	1	2	—	1	—
24	6	6	7	5	4	9	4	21	—	25	3
—	—	—	61	4	69	72	—	20	—	141	—
—	—	—	34	—	25	—	—	88	—	—	—
21	—	7	—	1	—	1	—	—	—	—	—
2	2	1	1	1	2	5	—	9	—	15	—
1	—	2	—	1	—	1	—	2	—	1	—
3	—	2	—	1	—	2	—	7	—	8	1
1	2	1	2	—	6	—	2	5	1	1	—
51	—	22	—	1	—	6	—	—	—	—	—
—	1	—	3	—	1	—	—	—	—	8	—
5	—	2	1	—	2	1	—	10	—	34	—
2	4	—	6	—	8	1	2	12	—	—	—
2	2	1	2	1	3	1	1	2	—	5	—
14	—	20	—	—	—	—	—	157	—	199	—
2	—	2	—	2	—	3	—	4	—	4	—
1	5	2	12	11	44	6	18	12	4	20	48
124	116	208	201	169	561	292	117	396	116	612	467

in some cases include data for countries which are shown separately for other years. millions of dollars): Imports: 1922: Denmark, 18; Greece, 5; Norway, 8. 1930: and Danzig, 5. 1928: Italy, 26; Poland and Danzig, 6; Uruguay, 9. 1929: Poland and

358 FEDERAL RESERVE CREDIT POLICIES

III. DISCOUNT RATES OF FEDERAL RESERVE BANKS ON ALL CLASSES AND MATURITIES OF DISCOUNTED BILLS, JANUARY 1, 1922 TO JUNE 30, 1932^a

(Per cent)

Date Effective	Boston	New York	Philadelphia	Cleveland	Richmond	Atlanta	Chicago	St. Louis	Minneapolis	Kansas City	Dallas	San Francisco
1922:												
Jan. 1 ^b	4½	4½	4½	5	5	5	5	5	5½	5	5½	5
Jan. 9.....	"	"	"	"	"	"	"	"	"	"	"	"
Jan. 11.....	"	"	"	"	"	"	"	"	5	"	"	"
Jan. 23.....	"	"	"	"	"	"	"	"	"	"	"	4½
Feb. 14.....	"	"	"	4½	"	"	"	"	"	"	"	"
Mar. 15.....	"	"	"	"	"	4½	"	"	"	"	"	"
Mar. 25.....	"	"	"	"	"	"	4½	"	"	"	"	"
Apr. 6.....	"	"	"	"	"	"	"	4½	"	"	"	"
Apr. 14.....	"	"	"	"	4½	"	"	"	"	"	"	"
June 22.....	"	4	"	"	"	"	"	"	"	"	"	"
June 23.....	4	"	"	"	"	"	"	"	"	"	"	"
July 8.....	"	"	"	"	"	"	"	"	"	"	"	4
July 12.....	"	"	"	"	"	"	"	"	"	"	4½	"
Aug. 12.....	"	"	"	"	"	"	"	"	"	4½	"	"
Aug. 15.....	"	"	"	"	"	"	"	"	4½	"	"	"
1923:												
Feb. 23.....	4½	4½	"	"	"	"	"	"	"	"	"	"
Mar. 6.....	"	"	"	"	"	"	"	"	"	"	"	4½
1924:												
May 1.....	"	4	"	"	"	"	"	"	"	"	"	"
June 2.....	"	"	"	4	"	"	"	"	"	"	"	"
June 10.....	"	"	"	"	"	"	"	"	"	"	"	4
June 12.....	3½	3½	"	"	"	"	"	"	"	"	"	"
June 14.....	"	"	"	"	4	"	4	"	"	"	"	"
June 18.....	"	"	"	"	"	4	"	"	"	"	"	"
June 19.....	"	"	3½	"	"	"	"	4	"	"	"	"
June 26.....	"	"	3½	"	"	"	"	"	"	"	"	"
July 1.....	"	"	"	"	"	"	"	"	"	4	"	"
July 16.....	"	"	"	"	"	"	"	"	"	"	4	"
Aug. 8.....	"	3	"	"	"	"	"	"	"	"	"	"
Aug. 15.....	"	"	"	3½	"	"	"	"	"	"	"	"
Aug. 25.....	"	"	"	"	"	"	"	"	"	"	"	3½
Oct. 15.....	"	"	"	"	"	"	"	"	4	"	"	"

III. DISCOUNT RATES OF FEDERAL RESERVE BANKS ON ALL CLASSES AND
MATURITIES OF DISCOUNTED BILLS, JANUARY 1, 1922 TO JUNE 30, 1932^a

(Per cent)

Date effective	Boston	New York	Philadelphia	Cleveland	Richmond	Atlanta	Chicago	St. Louis	Minneapolis	Kansas City	Dallas	San Francisco
1925:												
Feb. 27.....	"	3½	"	"	"	"	"	"	"	"	"	"
Nov. 10.....	4	"	"	"	"	"	"	"	"	"	"	"
Nov. 17.....	"	"	"	4	"	"	"	"	"	"	"	"
Nov. 20.....	"	"	4	"	"	"	"	"	"	"	"	"
Nov. 23.....	"	"	"	"	"	"	"	"	"	"	"	4
1926:												
Jan. 8.....	"	4	"	"	"	"	"	"	"	"	"	"
Apr. 23.....	"	3½	"	"	"	"	"	"	"	"	"	"
Aug. 13.....	"	4	"	"	"	"	"	"	"	"	"	"
1927:												
July 29.....	"	"	"	"	"	"	"	"	"	3½	"	"
Aug. 4.....	"	"	"	"	"	"	"	3½	"	"	"	"
Aug. 5.....	3½	3½	"	"	"	"	"	"	"	"	"	"
Aug. 6.....	"	"	"	3½	"	"	"	"	"	"	"	"
Aug. 12.....	"	"	"	"	"	"	"	"	"	"	3½	"
Aug. 13.....	"	"	"	"	"	3½	"	"	"	"	"	"
Aug. 16.....	"	"	"	"	3½	"	"	"	"	"	"	"
Sept. 7.....	"	"	"	"	"	"	3½	"	"	"	"	"
Sept. 8.....	"	"	3½	"	"	"	"	"	"	"	"	"
Sept. 10.....	"	"	"	"	"	"	"	"	"	"	"	3½
Sept. 13.....	"	"	"	"	"	"	"	"	3½	"	"	"
1928:												
Jan. 25.....	"	"	"	"	"	"	4	"	"	"	"	"
Jan. 27.....	"	"	"	"	4	"	"	"	"	"	"	"
Feb. 3.....	"	4	"	"	"	"	"	"	"	"	"	"
Feb. 4.....	"	"	"	"	"	"	"	"	"	"	"	4
Feb. 7.....	"	"	"	"	"	"	"	"	4	"	"	"
Feb. 8.....	4	"	"	"	"	"	"	"	"	"	4	"
Feb. 10.....	"	"	"	"	"	"	"	"	"	4	"	"
Feb. 11.....	"	"	"	"	"	4	"	"	"	"	"	"
Feb. 16.....	"	"	4	"	"	"	"	"	"	"	"	"
Feb. 21.....	"	"	"	"	"	"	"	4	"	"	"	"
Mar. 1.....	"	"	"	4	"	"	"	"	"	"	"	"

360 *FEDERAL RESERVE CREDIT POLICIES*III. DISCOUNT RATES OF FEDERAL RESERVE BANKS ON ALL CLASSES AND MATURITIES OF DISCOUNTED BILLS, JANUARY 1, 1922 TO JUNE 30, 1932^a

(Per cent)

Date effective	Boston	New York	Philadelphia	Cleveland	Richmond	Atlanta	Chicago	St. Louis	Minneapolis	Kansas City	Dallas	San Francisco
Apr. 20.....	4½	"	"	"	"	"	4½	"	"	"	"	"
Apr. 23.....	"	"	"	"	"	"	"	4½	"	"	"	"
Apr. 24.....	"	"	"	"	4½	"	"	"	"	"	"	"
Apr. 25.....	"	"	"	"	"	"	"	"	4½	"	"	"
May 7.....	"	"	"	"	"	"	"	"	"	"	4½	"
May 17.....	"	"	4½	"	"	"	"	"	"	"	"	"
May 18.....	"	4½	"	"	"	"	"	"	"	"	"	"
May 25.....	"	"	"	4½	"	"	"	"	"	"	"	"
May 26.....	"	"	"	"	"	4½	"	"	"	"	"	"
June 2.....	"	"	"	"	"	"	"	"	"	"	"	4½
June 7.....	"	"	"	"	"	"	"	"	"	4½	"	"
July 11.....	"	"	"	"	"	"	"	"	"	"	"	"
July 13.....	"	5	"	"	5	"	5	"	"	"	"	"
July 14.....	"	"	"	"	"	5	"	"	"	"	"	"
July 19.....	5	"	"	"	"	"	"	5	"	"	"	"
July 26.....	"	"	5	"	"	"	"	"	"	"	"	"
Aug. 1.....	"	"	"	5	"	"	"	"	"	"	"	"
1929:												
Mar. 2.....	"	"	"	"	"	"	"	"	"	"	5	"
May 6.....	"	"	"	"	"	"	"	"	"	5	"	"
May 14.....	"	"	"	"	"	"	"	"	5	"	"	"
May 20.....	"	"	"	"	"	"	"	"	"	"	"	5
Aug. 9.....	"	6	"	"	"	"	"	"	"	"	"	"
Nov. 1.....	"	5	"	"	"	"	"	"	"	"	"	"
Nov. 15.....	"	4½	"	"	"	"	"	"	"	"	"	"
Nov. 21.....	4½	"	"	"	"	"	"	"	"	"	"	"
Nov. 23.....	"	"	"	"	"	"	4½	"	"	"	"	"
Dec. 6.....	"	"	"	"	"	"	"	"	"	"	"	4½
Dec. 10.....	"	"	"	"	"	4½	"	"	"	"	"	"
Dec. 20.....	"	"	"	"	"	"	"	"	"	4½	"	"
1930:												
Jan. 16.....	"	"	4½	"	"	"	"	"	"	"	"	"
Feb. 7.....	"	4	"	"	4½	"	"	"	"	"	"	"
Feb. 8.....	"	"	"	4½	"	"	4	"	4½	"	4½	"
Feb. 11.....	"	"	"	"	"	"	"	4½	"	"	"	"

III. DISCOUNT RATES OF FEDERAL RESERVE BANKS ON ALL CLASSES AND MATURITIES OF DISCOUNTED BILLS, JANUARY 1, 1922 TO JUNE 30, 1932^a

(Per cent)

Date effective	Boston	New York	Philadelphia	Cleveland	Richmond	Atlanta	Chicago	St. Louis	Minneapolis	Kansas City	Dallas	San Francisco
Feb. 13.....	4	"	"	"	"	"	"	"	"	"	"	"
Feb. 15.....	"	"	"	"	"	"	"	"	"	4	"	"
Mar. 14.....	"	3½	"	"	"	"	"	"	"	"	"	"
Mar. 15.....	"	"	"	4	"	"	"	"	"	"	"	"
Mar. 20.....	"	"	4	"	"	"	"	"	"	"	"	"
Mar. 21.....	"	"	"	"	"	"	"	"	"	"	"	4
Apr. 8.....	"	"	"	"	"	"	"	"	"	"	4	"
Apr. 11.....	"	"	"	"	4	"	"	"	"	"	"	"
Apr. 12.....	"	"	"	"	"	4	"	4	"	"	"	"
Apr. 15.....	"	"	"	"	"	"	"	"	4	"	"	"
May 2.....	"	3	"	"	"	"	"	"	"	"	"	"
May 8.....	3½	"	"	"	"	"	"	"	"	"	"	"
June 7.....	"	"	3½	"	"	"	"	"	"	"	"	"
June 20.....	"	"	"	"	"	"	"	"	"	"	"	"
June 21.....	"	2½	"	"	"	"	3½	"	"	"	"	"
July 3.....	3	"	3½	"	"	"	"	"	"	"	"	"
July 12.....	"	"	"	"	"	3½	"	"	"	"	"	"
July 18.....	"	"	"	"	3½	"	"	"	"	"	"	"
Aug. 7.....	"	"	"	"	"	"	"	3½	"	"	"	"
Aug. 8.....	"	"	"	"	"	"	"	"	"	"	"	3½
Aug. 15.....	"	"	"	"	"	"	"	"	"	3½	"	"
Sept. 9.....	"	"	"	"	"	"	"	"	"	"	3½	"
Sept. 12.....	"	"	"	"	"	"	"	"	3½	"	"	"
Dec. 24.....	"	2	"	"	"	"	"	"	"	"	"	"
Dec. 29.....	"	"	"	3	"	"	"	"	"	"	"	"
1931:												
Jan. 2.....	2½	"	"	"	"	"	"	"	"	"	"	"
Jan. 8.....	"	"	"	"	"	"	"	3	"	"	"	"
Jan. 9.....	"	"	"	"	"	"	"	"	"	"	"	3
Jan. 10.....	"	"	"	"	"	3	3	"	"	"	"	"
May 7.....	2	"	3	"	"	"	"	"	"	"	"	"
May 8.....	"	1½	"	"	"	"	"	"	"	"	3	"
May 9.....	"	"	"	2½	"	"	2½	2½	"	"	"	"
May 15.....	"	"	"	"	3	"	"	"	"	"	"	"

362 *FEDERAL RESERVE CREDIT POLICIES*III. DISCOUNT RATES OF FEDERAL RESERVE BANKS ON ALL CLASSES AND MATURITIES OF DISCOUNTED BILLS, JANUARY 1, 1922 TO JUNE 30, 1932^a

(Per cent)

Date Effective	Boston	New York	Philadelphia	Cleveland	Richmond	Atlanta	Chicago	St. Louis	Minneapolis	Kansas City	Dallas	San Francisco
May 21.....	"	"	"	"	"	"	"	"	"	3	"	"
May 22.....	"	"	"	"	"	"	"	"	"	"	"	2½
Oct. 9.....	"	2½	"	"	"	"	"	"	"	"	"	"
Oct. 10.....	2½	"	"	3	"	"	"	"	"	"	"	"
Oct. 16.....	"	3½	"	"	"	"	"	"	"	"	"	"
Oct. 17.....	3½	"	"	"	"	"	3½	"	"	"	"	"
Oct. 20.....	"	"	"	"	4	"	"	"	"	"	"	"
Oct. 21.....	"	"	"	"	"	"	"	"	"	"	4	3½
Oct. 22.....	"	"	3½	"	"	"	"	3½	"	"	"	"
Oct. 23.....	"	"	"	"	"	"	"	"	"	3½	"	"
Oct. 24.....	"	"	"	3½	"	"	"	"	"	"	"	"
Nov. 14.....	"	"	"	"	"	3½	"	"	"	"	"	"
1932:												
Jan. 25.....	"	"	"	"	3½	"	"	"	"	"	"	"
Jan. 28.....	"	"	"	"	"	"	"	"	"	"	3½	"
Feb. 26.....	"	3	"	"	"	"	"	"	"	"	"	"
June 24.....	"	2½	"	"	"	"	"	"	"	"	"	"
June 25.....	"	"	"	"	"	"	2½	"	"	"	"	"
June 30 ^b	3½	2½	3½	3½	3½	3½	2½	3½	3½	3½	3½	3½

^a Compiled from *Annual Report of the Federal Reserve Board*, 1930, pp. 75-76 and *Federal Reserve Bulletins*.

^b Rate in effect.

^c 5 per cent on 6-9 month agricultural and livestock paper from Apr. 7, 1923, to June 11, 1924 inclusive.

^d 5 per cent on 6-9 month agricultural and livestock paper from Apr. 19, 1923, to June 25, 1924 inclusive; 4½ per cent on 91-day to 6-month agricultural and livestock paper from June 19 to June 25, 1924.

NOTE.—Discount rates became applicable to 6-9 month agricultural and livestock paper, which was made eligible by the Mar. 4, 1923 amendment to the Federal Reserve Act, on the following dates in 1923: Boston, Apr. 7; New York, Aug. 6; Philadelphia, Apr. 19; Cleveland, Apr. 9; Richmond, Apr. 7; Atlanta, Mar. 22; Chicago, Aug. 16; St. Louis, Apr. 5; Minneapolis, Apr. 11; Kansas City, Apr. 14; Dallas, Apr. 12; San Francisco, Mar. 21.

IV. RESERVE PERCENTAGE OF THE FEDERAL RESERVE BANKS,
BY MONTHS, 1922-32^a

Month	Reserve Percentage	Month	Reserve Percentage	Month	Reserve Percentage
1922:		Aug.	75.5	Mar.	70.3
Jan.	74.7	Sept.	73.8	April	72.7
Feb.	76.9	Oct.	72.0	May	74.4
Mar.	77.6	Nov.	71.6	June	74.5
April	77.6	Dec.	68.5	July	73.8
May	77.6	1926:		Aug.	74.2
June	77.8	Jan.	72.5	Sept.	73.5
July	78.2	Feb.	74.1	Oct.	73.3
Aug.	79.7	Mar.	74.3	Nov.	70.2
Sept.	78.0	April	74.7	Dec.	69.3
Oct.	76.7	May	74.9	1930:	
Nov.	76.1	June	75.4	Jan.	74.4
Dec.	73.5	July	74.7	Feb.	78.3
1923:		Aug.	75.0	Mar.	80.3
Jan.	75.0	Sept.	73.6	April	81.0
Feb.	76.1	Oct.	72.8	May	82.6
Mar.	75.7	Nov.	73.0	June	82.4
April	76.0	Dec.	70.6	July	82.0
May	75.9	1927:		Aug.	81.7
June	76.7	Jan.	75.6	Sept.	81.4
July	76.4	Feb.	79.0	Oct.	81.5
Aug.	77.6	Mar.	79.1	Nov.	81.3
Sept.	76.4	April	78.7	Dec.	76.2
Oct.	76.1	May	78.7	1931:	
Nov.	76.3	June	77.8	Jan.	79.0
Dec.	75.0	July	77.9	Feb.	83.4
1924:		Aug.	78.4	Mar.	84.0
Jan.	79.2	Sept.	76.5	April	83.5
Feb.	81.2	Oct.	75.1	May	84.4
Mar.	80.5	Nov.	72.4	June	84.3
April	80.5	Dec.	68.4	July	84.3
May	82.7	1928:		Aug.	81.4
June	82.5	Jan.	71.2	Sept.	77.5
July	82.6	Feb.	74.0	Oct.	62.6
Aug.	82.4	Mar.	73.5	Nov.	63.1
Sept.	80.1	April	71.2	Dec.	65.2
Oct.	78.5	May	69.5	1932:	
Nov.	77.1	June	68.0	Jan.	66.5
Dec.	73.8	July	68.0	Feb.	67.4
1925:		Aug.	69.0	Mar.	69.7
Jan.	76.2	Sept.	67.6	Apr.	69.3
Feb.	77.0	Oct.	67.1	May	64.8
Mar.	76.4	Nov.	66.7	June	58.4
April	76.6	Dec.	63.6		
May	76.8	1929:			
June	76.3	Jan.	66.8		
July	76.1	Feb.	69.4		

^a Compiled from *Annual Report of the Federal Reserve Board*, 1927, pp. 57-58; *bid.*, 1930, p. 40; and *Federal Reserve Bulletins* for 1932.

V. PRINCIPAL RESOURCES AND LIABILITIES OF ALL MEMBER
BANKS, ON CALL DATES, 1922-31*
(In millions of dollars)

Call date	Loans and Investments			Capital, Sur- plus, and Undi- vided Profits ^e	Time De- posits ^d	Net De- mand De- posits	Re- serve with Fed- eral Re- serve Banks	Bills Pay- able and Redis- counts
	Total	Loans ^b	Invest- ments					
1922:								
Mar. 10.....	23,278	17,080	6,198	4,185	6,662	14,498	1,723	758
June 30.....	24,182	17,165	7,017	4,214	7,175	15,539	1,835	592
Dec. 29.....	25,579	17,930	7,649	4,364	7,645	16,203	1,939	727
1923:								
Apr. 3.....	26,141	18,419	7,722	4,356	8,143	16,086	1,909	815
June 30.....	26,507	18,750	7,757	4,367	8,378	16,066	1,871	944
Sept. 14.....	26,319	18,719	7,600	4,436	8,466	15,919	1,869	983
Dec. 31.....	26,487	18,842	7,645	4,378	8,651	16,376	1,900	808
1924:								
Mar. 31.....	26,663	19,045	7,618	4,468	8,890	16,112	1,893	614
June 30.....	27,167	19,204	7,963	4,486	9,204	16,838	1,965	443
Oct. 10.....	28,311	19,713	8,599	4,594	9,597	17,804	2,121	325
Dec. 31.....	28,746	19,933	8,813	4,532	9,805	18,468	2,228	408
1925:								
Apr. 6.....	29,046	20,176	8,869	4,669	10,127	17,708	2,092	486
June 30.....	29,518	20,655	8,863	4,690	10,381	18,277	2,191	559
Sept. 28.....	30,176	21,285	8,890	4,688	10,467	18,259	2,147	712
Dec. 31.....	30,884	21,996	8,888	4,678	10,653	19,260	2,238	733
1926:								
Apr. 12.....	30,819	21,785	9,034	4,826	10,955	18,392	2,136	620
June 30.....	31,184	22,060	9,123	4,832	11,173	18,804	2,236	612
Dec. 31.....	31,642	22,652	8,990	4,944	11,440	18,922	2,210	760
1927:								
Mar. 23.....	31,949	22,327	9,622	5,086	11,818	18,542	2,321	546
June 30.....	32,756	22,938	9,818	5,147	12,210	19,250	2,280	541
Oct. 10.....	33,186	23,227	9,959	5,295	12,459	19,170	2,320	528
Dec. 31.....	34,247	23,886	10,361	5,341	12,765	20,105	2,514	663

V. PRINCIPAL RESOURCES AND LIABILITIES OF ALL MEMBER
BANKS, ON CALL DATES, 1922-31^a
(In millions of dollars)

Call date	Loans and Investments			Capital, Surplus, and Undi- vided Profits ^c	Time De- posits ^d	Net De- mand De- posits	Re- serve with Fed- eral Re- serve Banks	Bills Pay- able and Redis- counts
	Total	Loans ^b	Invest- ments					
1928:								
Feb. 28.....	33,688	23,099	10,590	5,404	12,923	19,236	2,367	581
June 30.....	35,061	24,303	10,758	5,625	13,439	19,191	2,342	1,209
Oct. 3.....	34,929	24,325	10,604	5,842	13,410	18,995	2,348	1,154
Dec. 31.....	35,684	25,155	10,529	5,899	13,453	19,944	2,409	1,162
1929:								
Mar. 27.....	35,393	24,945	10,448	6,174	13,329	18,833	2,339	1,153
June 29.....	35,711	25,658	10,052	6,345	13,325	18,977	2,359	1,198
Oct. 4.....	35,914	26,165	9,749	6,675	13,318	18,952	2,322	1,150
Dec. 31.....	35,934	26,150	9,784	6,709	13,233	19,797	2,374	879
1930:								
Mar. 27.....	35,056	25,119	9,937	6,760	13,519	18,489	2,353	347
June 30.....	35,656	25,214	10,442	6,726	13,812	19,170	2,408	435
Sept. 24.....	35,472	24,738	10,734	6,827	13,945	18,657	2,415	316
Dec. 31.....	34,860	23,870	10,989	6,593	13,546	18,969	2,475	355
1931:								
Mar. 25.....	34,729	22,840	11,888	6,597	13,663	18,481	2,364	281
June 30.....	33,923	21,816	12,106	6,430	13,515	18,357	2,396	217
Sept. 29.....	33,073	20,874	12,199	6,358	12,776	17,445	2,339	465
Dec. 31.....	30,575	19,261	11,315	5,998	11,316	16,067	1,975	839

^a Compiled from *Annual Report of the Federal Reserve Board*, 1930, p. 95, and *Federal Reserve Bulletins* for 1932.

^b Includes rediscounts and overdrafts; excludes acceptances of other banks and bills of exchange sold with endorsement.

^c Includes reserves for dividends, contingencies, etc., but excludes, beginning Sept. 28, 1925, reserves for interest, taxes, and other expenses accrued and unpaid.

^d Includes postal savings deposits, except that such deposits of state bank members prior to June 20, 1917 are included with demand deposits.

APPENDIX B

REFERENCES FOR FURTHER READING

The principal sources of information concerning Federal Reserve policy are the *Federal Reserve Bulletin*, the annual reports of the Federal Reserve Board and the various Federal Reserve Banks, and the following congressional hearings:

69 Cong. 1 sess., *Stabilization*, Hearings on H.R. 7895 before Committee on Banking and Currency, 1927.

70 Cong. 1 sess., *Brokers' Loans*, Hearings on S. res. 113 before Committee on Banking and Currency, 1928.

70 Cong. 1 sess., *Stabilization*, Hearings on H.R. 11806 before Committee on Banking and Currency, 1928.

71 Cong. 3 sess., *Operations of the National and Federal Reserve Banking Systems*, Hearings on S. res. 71 before Committee on Banking and Currency, 1931.

72 Cong. 1 sess., *Stabilization of Commodity Prices*, Hearings on H.R. 10517 before Committee on Banking and Currency, 1932.

The following additional references are suggested for use in connection with certain chapters:

CHAPTERS I-II

Anderson, B. M., "Bank Money and the Capital Supply," *Chase Economic Bulletin*, Nov. 8, 1926, Vol. 6, No. 3.

Beckhart, B. H., *The Discount Policy of the Reserve System*, Henry Holt, 1924, especially Chaps. 1, 2, 4, 9.

Burgess, W. R., "The Mechanism of Federal Reserve Policy," *Journal of the American Bankers' Association*, 1926, Vol. 18, pp. 596-97.

———. "The Open Market Operations of the Federal Reserve System," *Acceptance Bulletin*, 1928, Vol. 10, pp. 10-19.

———. *The Reserve Banks and the Money Market*, Harpers, 1927, Chaps. 3-4, 10-13.

- . *Interpretations of Federal Reserve Policy in the Speeches and Writings of Benjamin Strong*, Harpers, 1930, Chaps. 10, 13, 15, 16.
- Edie, L. D., *The Banks and Prosperity*, Harpers, 1931.
- Gregory, Thomas E., "What Can Central Banks Really Do?" *American Economic Review*, 1925, Vol. 15, pp. 53-59.
- Harris, S. E., "The Federal Reserve Act and Federal Reserve Policies," *Quarterly Journal of Economics*, 1931, Vol. 45, pp. 371-408.
- Keynes, J. M., *A Treatise on Money*, Harcourt Brace, London, 1930, especially Chaps. 13, 31-33, 37.
- de Kock, M. H., *The Functions and Operations of Central Banks, with Special Reference to the South African Reserve Bank*, Juta and Co., Ltd., Cape Town, 1929.
- McKenna, Reginald, *Post-War Banking Policy*, Heinemann, London, 1928, especially pp. 74-117.
- Riefler, Winfield W., *Money Rates and Money Markets in the United States*, Harpers, 1930.

CHAPTER III

- Anderson, B. M., "An Analysis of the Money Market," *Chase Economic Bulletin*, June 4, 1928, Vol. 8, No. 1.
- Burgess, W. R., Annual reviews of the money market published in *Review of Economic Statistics* each successive year from 1926.
- Reed, Harold L., *Federal Reserve Policy, 1921-1930*, McGraw-Hill, 1930.
- Riefler, Winfield W., *Money Rates and Money Markets in the United States*, Harpers, 1930, Chaps. 9-10.

CHAPTER IV

- Burgess, W. R., *The Reserve Banks and the Money Market*, Harpers, 1927, Chaps. 6, 15.
- Riefler, Winfield W., *Money Rates and Money Markets in the United States*, Harpers, 1930, Chap. 4.

CHAPTER V

- Edie, L. D., *The Banks and Prosperity*, Harpers, 1931, Chap. 10.

- Haberler, Gottfried, "Die Kaufkraft des Geldes und die Stabilisierung der Wirtschaft," *Schmoller's Jahrbuch*, 1932, Vol. 55, pp. 33-63.
- Hahn, L. Albert, *Geld und Kredit*, Mohr, Tübingen, 1929, pp. 71-80, 205-18.
- Reed, Harold L., *Federal Reserve Policy, 1921-1930*, McGraw-Hill, 1930, pp. 23-64.

CHAPTER VI

- Anderson, B. M., "Some Major Forces in the International Money Market," *Chase Economic Bulletin*, Oct. 29, 1927, Vol. 7, No. 4.
- . "Our Export Trade and the International Money Market," *Ibid.*, Mar. 14, 1930, Vol. 10, No. 1.
- . "Cheap Money, Gold, and Federal Reserve Bank Policy," *Ibid.*, Aug. 4, 1924, Vol. 4, No. 3.
- . "The Effect on Europe of Tight Money in America," *Ibid.*, July 20, 1929, Vol. 9, No. 4.
- . "The Gold Standard and the American Gold Tradition," *Ibid.*, Nov. 20, 1931, Vol. 11, No. 5.
- Hantos, Elemér, *Die Kooperation der Notenbanken*, Mohr, Tübingen, 1931.
- Keynes, J. M., *A Treatise on Money*, Harcourt Brace, London, 1930, Chaps. 34-38.
- Reed, Harold L., *Federal Reserve Policy, 1921-1930*, McGraw-Hill, 1930, pp. 64-77, 96-110.
- Schweizer, Arthur, *Die Neue Goldwährung*, Helbing and Lichtenhahn, Basle, 1929.

CHAPTERS VII-VIII

- Anderson, B. M., "Brokers' Loans and Bank Credit," *Chase Economic Bulletin*, Oct. 31, 1928, Vol. 8, No. 4.
- . "Some Side Lights on the Money Situation," *Ibid.*, Feb. 13, 1929, Vol. 9, No. 2.
- Balogh, Thomas, "Latente Inflation," *Schmoller's Jahrbuch*, 1929, Vol. 53, Heft 4, pp. 45 ff.
- . "Absorption of Credit by the Stock Exchange," *American Economic Review*, 1930, Vol. 20, pp. 658-63.

- Cassel, Gustav, "Discount Policy and Stock Exchange Speculation," *Skandinaviska Kreditaktiebolaget Quarterly Report*, October 1928, pp. 57-60.
- . "Does the Stock Exchange Absorb Capital?" *Ibid.*, April 1929, pp. 21-25.
- Foster, William Trufant, and Catchings, Waddill, "Is the Reserve Board Keeping Faith?" *Atlantic Monthly*, 1929, Vol. 144, pp. 93-102.
- Hahn, L. Albert, *Geld und Kredit*, Mohr, Tübingen, 1929, pp. 184-89.
- Hoover, Calvin B., "Brokers' Loans and Bank Deposits," *Journal of Political Economy*, 1929, Vol. 37, pp. 713-27.
- Liefmann, R., "Spekulationskapital und Konjunkturschwankungen," *Wirtschaftsdienst*, 1930, Vol. 15, pp. 89-94.
- Machlup, Fritz, *Börsenkredit, Industriekredit und Kapitalbildung*, Julius Springer, Vienna, 1931.
- Merzbach, Leopold, "Die Börsenkredite," *Bank-Archiv*, 1929, Vol. 28, pp. 173-75.
- Reed, Harold L., *Federal Reserve Policy, 1921-1930*, McGraw-Hill, Chaps. 4-6.
- Reisch, Richard, "Rückwirkungen der Börsenspekulation auf der Kreditmarkt," *Zeitschrift für Nationalökonomie*, 1929, Vol. 6, Heft 2.
- . "Ueber das Wesen und die Wirkungen der Börsenkredite," *Bank-Archiv*, 1929, Vol. 28, pp. 154-62.
- Rogers, James H., *Stock Speculation and the Money Market*, Lucas Brothers, Columbia, Mo., 1927.

CHAPTER IX

- Anderson, B. M., "Gold," *Chase Economic Bulletin*, Mar. 16, 1931, Vol. 11, No. 1.
- Barbour, Percy E., "Gold Shortage Improbable," *Annalist*, 1931, Vol. 38, pp. 299-300.
- . "Declining Costs Favor Gold Mines," *Ibid.*, pp. 341-42.
- . "Increase in Gold Costs Continues despite Higher Costs, Lower Grade Ore," *Ibid.*, pp. 383-84.
- Burgess, W. R., *The Reserve Banks and the Money Market*, Harpers, 1927, Chap. 14.

Cassel, Gustav, "The Shortage of Gold," *Skandinaviska Kreditaktiebolaget Quarterly Report*, October 1926, pp. 49-52.

———. "Gold Production and Gold Value," *Ibid.*, January 1927, pp. 1-3.

Keynes, J. M., *A Treatise on Money*, Harcourt Brace, London, 1930, Chap. 35.

League of Nations Pub. 1930. II. 26., *Interim Report of the Gold Delegation of the Financial Committee*.

———. Pub. 1930. II. 34., *Selected Documents Submitted to the Gold Delegation of the Financial Committee*.

———. Pub. 1931. II. A. 2., *Second Interim Report of the Gold Delegation of the Financial Committee*.

———. Pub. 1931. II. A. 7., *Selected Documents on the Distribution of Gold Submitted to the Gold Delegation of the Financial Committee*.

———. Pub. 1932. II. A. 12., *Report of the Gold Delegation of the Financial Committee*.

CHAPTER X

Anderson, B. M., "Commodity Price Stabilization a False Goal of Central Bank Policy," *Chase Economic Bulletin*, May 8, 1929, Vol. 9, No. 3.

———. "The Gold Standard Versus 'A Managed Currency,'" *Ibid.*, Mar. 23, 1925, Vol. 5, No. 1.

———. "Equilibrium Creates Purchasing Power," *Ibid.*, June 12, 1931, Vol. 11, No. 3.

———. "Our Export Trade and the International Money Market," *Ibid.*, Mar. 14, 1930, Vol. 10, No. 1.

———. "Bank Expansion Versus Savings," *Ibid.*, June 25, 1928, Vol. 8, No. 2.

———. "The Goldsborough Bill and the Government Security Purchases of the Federal Reserve Banks," *Ibid.*, May 16, 1932, Vol. 12, No. 2.

Burns, Arthur F., "Quantity Theory and Price Stabilization," *American Economic Review*, 1929, Vol. 19, pp. 561-79.

Cassel, Gustav, "The Shortage of Gold," *Skandinaviska Kreditaktiebolaget Quarterly Report*, October 1926, pp. 49-52.

- . "The Dislocation of Prices and its Consequences," *Ibid.*, April 1927, pp. 21-24.
- Edie, Lionel D., "The 1928 Hearings on the Strong Bill," *Journal of Political Economy*, 1929, Vol. 37, pp. 340-54.
- Haberler, Gottfried, "Die Kaufkraft des Geldes und die Stabilisierung der Wirtschaft," *Schmoller's Jahrbuch*, 1932, Vol. 55, pp. 993-1023.
- Hawtrey, R. G., "Money and Index Numbers," *Journal of the Royal Statistical Society*, 1930, Vol. 93, pp. 64-85; discussion, pp. 86-103.
- Hayek, F. A., "Das Schicksal der Goldwährung," *Der Deutsche Volkswirth*, 1932, Vol. 6, pp. 642-45.
- Sprague, O. M., "Price Stabilization," *American Economic Review*, 1929, Vol. 19, Part 1, Supplement, pp. 61-68.
- (See also references listed under Chapter IX.)

CHAPTER XI

- Anderson, B. M., "The Goldsborough Bill and the Government Security Purchases of the Federal Reserve Banks," *Chase Economic Bulletin*, May 16, 1932, Vol. 12, No. 2.
- Beckhart, B. H., *The Discount Policy of the Federal Reserve System*, Henry Holt, 1924, pp. 454-71.
- Cassel, Gustav, "The Connection between the Discount Rate and the Price Level," *Skandinaviska Kreditaktiebolaget Quarterly Report*, October 1927, pp. 61-63.
- . "The Influence of the United States on the World Price Level," *Ibid.*, January 1928, pp. 1-5.
- Edie, Lionel D., *The Banks and Prosperity*, Harpers, 1931.
- Gregory, Thomas E., "What Can Central Banks Really Do?" *American Economic Review*, 1925, Vol. 15, pp. 53-59.
- Moulton, Harold G., "Commercial Banks and Capital Formation," *Journal of Political Economy*, 1918, Vol. 26, pp. 484-508, 638-63, 705-31, 849-81.

CHAPTER XII

- American Acceptance Council, *Facts and Figures Relating to the American Money Market*, New York, 1931.
- Burgess, W. R., *The Reserve Banks and the Money Market*, Harpers, 1927, Chap. 8.

372 *FEDERAL RESERVE CREDIT POLICIES*

Mathewson, Park, *Acceptances, Trade and Bankers*, Appleton, 1921.

CHAPTER XIII

Beckhart, B. H., *The Discount Policy of the Reserve System*, Henry Holt, 1924, pp. 140-58.

CHAPTER XV

Burgess, W. R., *The Reserve Banks and the Money Market*, Harpers, 1927, pp. 285-93.

Riefler, Winfield W., *Money Rates and Money Markets in the United States*, Harpers, 1930, Chap. 5.

INDEX

- Acceptances, 27-28, 101-04, Chap. XII
- Anderson, B. M., 164, 172, 323
- Balogh, T., 166
- Banking policies, 4-5
- Beckhart, B. H., 12, 294
- Borrowing, interbank, tradition against, 32-33, 231-32
- Brokers' loans, 52, 151, 156-61, 282
- Brown, H. G., 201
- Burgess, W. R., 69, 126, 251
- Cassel, G., 95, 162-66, 172, 200, 201
- Catchings, W., 95
- Central banking, theory of, 9-12, 30-31, 64-66, 190-96, 278
- Chicago, Federal Reserve Bank of, 48
- Collateral loans to member banks, 272-75
- Commons, J. R., 201, 205, 207, 212
- Co-operation of central banks, Chap. VI, 193-98
- Credit policy, criteria of, Chaps. I, V, XVI, XVII; technique of, Chaps. II, XI
- Cycle, business, theory of, 87, 90-91
- Direct pressure, 19, 33, 51, 132-40, 145-46, 176
- Dollar exchange, 254
- Edie, L. D., 88, 222, 316, 323
- Einzig, P., 97
- Elastic currency, 63-64
- Failures, bank, 340-48
- Farm relief, 204
- Federal Advisory Council, 136
- Finance bills, 244, 254
- Financial statements, 266-68
- Fisher, Irving, 95, 200, 201, 218
- Foreign exchange, 101-04
- Foster, W. T., 95, 207
- Free gold, 274
- Glass, Carter, 137, 281, 298
- Glass-Steagall Act, 274
- Gold, adequacy of world supply of, 195-96
- Gold certificates, 37-38, 83
- Gold exchange standard, 110-11
- Gold movements, 11-15, 34-36, 46-47, 56-57, 72-73, 98-99, Chap. IX, 235, 237-38, 315, 356-57
- Goldenweiser, E. A., 201
- Haberler, G., 218
- Hahn, A., 187-88
- Hamlin, C. S., 135, 209, 217
- Hantos, E., 97
- Harding, W. P. G., 280
- Harrison, G. L., 126, 135, 281
- Hastings, H. B., 201
- Hawtreys, R. G., 218
- Index numbers of prices, 208-17, 222-23
- Interest rates, 44-45, 50, Chap. IV, 154-56, Chap. XV
- Inventories, 87
- Jenks, J. W., 201
- Keynes, J. M., 94, 103, 199, 200, 212
- King, W. I., 201
- Lehfeldt, R. A., 200
- Liquidity of bank assets, Chaps. XII, XIII, 328-34
- Lockhart, O. P., 298

- Lombard, N., 206
- Machlup, F., 161
- Matheson, P., 247
- Miller, A. C., 112, 124, 127, 128, 201, 218, 232, 280
- Mitchell, W. C., 208
- Moulton, H. G., 264, 291
- Neutral money, 319-24
- New York, Federal Reserve Bank of, 53, 124-28, 296
- Norris, G. W., 119
- Open market operations, 26-28, 38-40, 228, 233-36, 272-73, 285-86
- Owen, R. L., 137
- Owens, R. N., 125, 221
- Prices, commodity, 77, 81, Chap. X
- Qualitative versus quantitative factors in credit control, 75-77, 124-33, 311
- Rediscount rates, 26, 229, 282-85, Chap. XV
- Reed, H. L., 79, 161
- Reichsbank, 147
- Reisch, R., 168
- Repurchase agreements, 249-53
- Reserve ratio of Federal Reserve Banks, 75
- Reserves of member banks, 19-24, 160
- Riefler, W. W., 231, 302
- Roberts, G. E., 119, 128
- Schacht, H., 105, 112, 222
- Schweizer, A., 97
- Seasonal factor in credit policy, 12-13, 28, 66-69
- Securities in bank portfolios, 44, 269-71, 330-31, 334-37
- Service policies, 5-6, 100
- Snyder, Carl, 211
- Somary, F., 344
- Sound credit, Chap. V
- Speculation, 48-55, Chaps. VII, VIII
- Sprague, O. M. W., 216, 294
- Stabilization, of business, 71-72; of currencies, 109; of prices, Chap. X
- Statistics, as basis of credit policy, 76
- Sterilization of gold, 83-84, 183
- Stewart, W. W., 74, 89, 201, 208
- Stock market. *See* Speculation
- Stockholders, corporate, number of, 170-72
- Strong, Benjamin, 69-70, 104, 108, 124-26, 135, 207, 259, 289
- Strong, James G., 205, 208
- Strong bills, Chap. X
- Taylor, H. C., 201
- Time deposits, 315-16
- Trade acceptances, 243, 247
- Watkins, L. L., 299
- Weiss, George, 167
- Willis, H. P., 247, 279, 281, 294
- Window-dressing, 69-70
- Young, R. A., 79, 153, 297

PUBLICATIONS OF THE BROOKINGS INSTITUTION*

INSTITUTE OF ECONOMICS SERIES

- (1.) GERMANY'S CAPACITY TO PAY.
By Harold G. Moulton and Constantine E. McGuire.
384 pp. 1923. \$2.50.
- (2.) RUSSIAN DEBTS AND RUSSIAN RECONSTRUCTION.
By Leo Pasvolsky and Harold G. Moulton. 247 pp.
1924. \$2.50.
- (3.) MAKING THE TARIFF IN THE UNITED STATES.
By Thomas Walker Page. 281 pp. 1924. \$3.
- (4.) AMERICAN AGRICULTURE AND THE EUROPEAN MARKET.
By Edwin G. Nourse. 333 pp. 1924. \$2.50.
- (5.) SUGAR IN RELATION TO THE TARIFF.
By Philip G. Wright. 312 pp. 1924. \$2.50.
- (6.) MINERS' WAGES AND THE COST OF COAL.
By Isador Lubin. 316 pp. 1924. Out of print.
- (7.) THE REPARATION PLAN.
By Harold G. Moulton. 325 pp. 1924. \$2.50.
- (8.) THE FRENCH DEBT PROBLEM.
By Harold G. Moulton and Cleona Lewis. 459 pp.
1925. \$2.
- (9.) THE RUHR-LORRAINE INDUSTRIAL PROBLEM.
By Guy Greer. 328 pp. 1925. \$2.50.
- (10.) THE CASE OF BITUMINOUS COAL.
By Walton H. Hamilton and Helen R. Wright. 310
pp. 1925. \$2.50.
- (11.) INTEREST RATES AND STOCK SPECULATION.
By Richard N. Owens and Charles O. Hardy. 221
pp. rev. ed. 1930. \$2.50.
- (12.) THE FEDERAL INTERMEDIATE CREDIT SYSTEM.
By Claude L. Benner. 375 pp. 1926. Out of print.
- (13.) THE TARIFF ON WOOL.
By Mark A. Smith. 350 pp. 1926. \$2.50.

* The parentheses indicate that the volume itself does not carry the number since it was given subsequent to publication.

LIST OF PUBLICATIONS

- (14.) THE CATTLE INDUSTRY AND THE TARIFF.
By Lynn Ramsay Edminster. 331 pp. 1926. \$2.50.
- (15.) THE COAL MINERS' STRUGGLE FOR INDUSTRIAL STATUS.
By Arthur E. Suffern. 462 pp. 1926. \$2.50.
- (16.) TAX-EXEMPT SECURITIES AND THE SURTAX.
By Charles O. Hardy. 216 pp. 1926. \$2.
- (17.) WORLD WAR DEBT SETTLEMENTS.
By Harold G. Moulton and Leo Pasvolsky. 448 pp. 1926. \$2.
- (18.) FINANCING THE LIVESTOCK INDUSTRY.
By Forrest M. Larmer. 327 pp. 1926. \$2.50.
- (19.) ITALY'S INTERNATIONAL ECONOMIC POSITION.
By Constantine E. McGuire. 588 pp. 1926. \$3.
- (20.) WORKERS' HEALTH AND SAFETY: A STATISTICAL PROGRAM.
By Robert Morse Woodbury. 207 pp. 1927. \$2.50.
- (21.) THE INTERNATIONAL ACCOUNTS.
By Cleona Lewis. 170 pp. 1927. \$2.
- (22.) INDUSTRIAL PROSPERITY AND THE FARMER.
By Russell C. Engberg. 286 pp. 1927. \$2.50.
- (23.) THE LEGAL STATUS OF AGRICULTURAL CO-OPERATION.
By Edwin G. Nourse. 555 pp. 1927. \$3.
- (24.) AMERICAN LOANS TO GERMANY.
By Robert R. Kuczynski. 378 pp. 1927. \$3.
- (25.) THE BRITISH COAL DILEMMA.
By Isador Lubin and Helen Everett. 370 pp. 1927. \$2.50.
- (26.) THE TARIFF ON ANIMAL AND VEGETABLE OILS.
By Philip G. Wright. 347 pp. 1928. \$2.50.
- (27.) A WAY OF ORDER FOR BITUMINOUS COAL.
By Walton H. Hamilton and Helen R. Wright. 365 pp. 1928. \$2.50.
- (28.) ECONOMIC NATIONALISM OF THE DANUBIAN STATES.
By Leo Pasvolsky. 609 pp. 1928. \$3.
- (29.) THE BALANCE OF BIRTHS AND DEATHS. Vol. I, Western and Northern Europe.
By Robert R. Kuczynski. 140 pp. 1928. Out of print.

LIST OF PUBLICATIONS

- (30.) LABOR AND INTERNATIONALISM.
By Lewis L. Lorwin. 682 pp. 1929. \$3.
- (31.) THE MEXICAN AGRARIAN REVOLUTION.
By Frank Tannenbaum. 543 pp. 1929. \$3.
- (32.) THE TARIFF ON IRON AND STEEL.
By Abraham Berglund and Philip G. Wright. 240 pp. 1929. \$3.
- (33.) THE ST. LAWRENCE NAVIGATION AND POWER PROJECT.
By Harold G. Moulton, Charles S. Morgan, and Adah L. Lee. 675 pp. 1929. \$4.
- (34.) RAILROAD PURCHASING AND THE BUSINESS CYCLE.
By John E. Partington. 309 pp. 1929. \$3.
- (35.) HAND-TO-MOUTH BUYING: A STUDY IN THE ORGANIZATION, PLANNING, AND STABILIZATION OF TRADE.
By Leverett S. Lyon. 487 pp. 1929. \$4.
- (36.) UNEMPLOYMENT INSURANCE IN GERMANY.
By Mollie Ray Carroll. 137 pp. 1929. \$2.50.
- (37.) INTERNATIONAL CONTROL OF RAW MATERIALS.
By Benjamin Bruce Wallace and Lynn Ramsay Edminster. 479 pp. 1930. \$3.50.
- (38.) BIRTH REGISTRATION AND BIRTH STATISTICS IN CANADA.
By Robert Kuczynski. 219 pp. 1930. \$3.
- (39.) BULGARIA'S ECONOMIC POSITION.
By Leo Pasvolksky. 409 pp. 1930. \$3.
- 40. THE CO-OPERATIVE MARKETING OF LIVESTOCK.
By Edwin G. Nourse and Joseph G. Knapp. 486 pp. 1931. \$3.50.
- 41. BANKERS' PROFITS FROM GERMAN LOANS.
By Robert R. Kuczynski. 228 pp. 1932. \$1.75.
- 42. THE CUBAN SITUATION AND OUR TREATY RELATIONS.
By Philip G. Wright. 208 pp. 1931. \$2.50.
- 43. THE BALANCE OF BIRTHS AND DEATHS. Vol. II, Eastern and Southern Europe.
By Robert R. Kuczynski. 170 pp. 1931. \$2.

LIST OF PUBLICATIONS

- 44. JAPAN: AN ECONOMIC AND FINANCIAL APPRAISAL.
By Harold G. Moulton with the collaboration of
Junichi Ko. 645 pp. 1931. \$4.
- 45. CREDIT POLICIES OF THE FEDERAL RESERVE SYSTEM.
By Charles O. Hardy. 374 pp. 1932. \$2.50.
- 46. WAR DEBTS AND WORLD PROSPERITY.
By Harold G. Moulton and Leo Pasvolsky. (In press.)

INSTITUTE FOR GOVERNMENT RESEARCH SERIES

Studies in Administration

- (1.) THE SYSTEM OF FINANCIAL ADMINISTRATION OF
GREAT BRITAIN.
By W. F. Willoughby, W. W. Willoughby, and S.
M. Lindsay. 362 pp. 1917. \$3.
- (2.) THE BUDGET: A TRANSLATION.
By René Stourm. 619 pp. 1917. \$4.
- (3.) THE PROBLEM OF A NATIONAL BUDGET.
By W. F. Willoughby. 220 pp. 1918. Out of print.
- (4.) THE MOVEMENT FOR BUDGETARY REFORM IN THE
STATES.
By W. F. Willoughby. 254 pp. 1918. \$3.
- (5.) THE CANADIAN BUDGETARY SYSTEM.
By H. C. Villard and W. W. Willoughby. 379 pp
1918. \$3.
- (6.) ORGANIZED EFFORTS FOR THE IMPROVEMENT OF
METHODS OF ADMINISTRATION IN THE UNITED
STATES.
By Gustavus A. Weber. 391 pp. 1919. \$3.
- (7.) TEACHERS' PENSION SYSTEMS IN THE UNITED STATES.
By Paul Studensky. 460 pp. 1920. \$3.
- (8.) THE FEDERAL SERVICE: A STUDY OF THE SYSTEM OF
PERSONNEL ADMINISTRATION OF THE UNITED
STATES GOVERNMENT.
By Lewis Mayers. 607 pp. 1922. \$5.
- (9.) THE REORGANIZATION OF THE ADMINISTRATIVE
BRANCH OF THE NATIONAL GOVERNMENT.
By W. F. Willoughby. 298 pp. 1923. Out of print.

LIST OF PUBLICATIONS

- (10.) THE DEVELOPMENT OF NATIONAL ADMINISTRATIVE ORGANIZATION IN THE UNITED STATES.
By Lloyd M. Short. 514 pp. 1923. \$5.
- (11.) THE STATISTICAL WORK OF THE NATIONAL GOVERNMENT.
By Laurence F. Schmeckebier. 574 pp. 1925. \$5.
- (12.) MANUAL OF ACCOUNTING AND REPORTING FOR THE OPERATING SERVICES OF THE NATIONAL GOVERNMENT.
By Henry P. Seidemann. 399 pp. 1926. \$5.
- (13.) THE NATIONAL GOVERNMENT AND PUBLIC HEALTH.
By James A. Tobey. 423 pp. 1926. \$3.
- (14.) THE NATIONAL BUDGET SYSTEM, WITH SUGGESTIONS FOR ITS IMPROVEMENT.
By W. F. Willoughby. 343 pp. 1927. \$3.
- (15.) THE DEPARTMENT OF JUSTICE OF THE UNITED STATES.
By Albert Langeluttig. 318 pp. 1927. \$3.
- (16.) THE LEGAL STATUS AND FUNCTIONS OF THE GENERAL ACCOUNTING OFFICE.
By W. F. Willoughby. 193 pp. 1927. \$3.
- (17.) THE PROBLEM OF INDIAN ADMINISTRATION.
By Lewis Meriam and Associates. 872 pp. 1928. \$5.
- (18.) THE DISTRICT OF COLUMBIA: ITS GOVERNMENT AND ADMINISTRATION.
By Laurence F. Schmeckebier. 943 pp. 1928. \$5.
- (19.) THE DEVELOPMENT OF GOVERNMENTAL FOREST CONTROL IN THE UNITED STATES.
By Jenks Cameron. 471 pp. 1928. \$3.
- (20.) MANUAL OF ACCOUNTING, REPORTING, AND BUSINESS PROCEDURE FOR THE TERRITORIAL GOVERNMENT OF HAWAII.
By Henry P. Seidemann. 570 pp. 1928. \$5.
- (21.) THE GOVERNMENT AND ADMINISTRATION OF GERMANY.
By Frederick F. Blachly and Miriam E. Oatman. 770 pp. 1928. \$5.
- (22.) GROUP REPRESENTATION BEFORE CONGRESS.
By E. Pendleton Herring. 309 pp. 1929. \$3.

LIST OF PUBLICATIONS

- (23.) REGISTRATION OF VOTERS IN THE UNITED STATES.
By Joseph P. Harris. 390 pp. 1929. \$3.
- (24.) THE GOVERNMENT AND ADMINISTRATION OF THE DISTRICT OF COLUMBIA: SUGGESTIONS FOR CHANGE.
By Laurence F. Schmeckebier and W. F. Willoughby. 187 pp. 1929. \$2.
25. FINANCIAL CONDITION AND OPERATION OF THE NATIONAL GOVERNMENT, 1921-1930.
By W. F. Willoughby. 234 pp. 1931. \$3.
26. STATE CENTRALIZATION IN NORTH CAROLINA.
By Paul V. Betters (editor). 261 pp. 1932. \$2.

Principles of Administration

- (1.) PRINCIPLES GOVERNING THE RETIREMENT OF PUBLIC EMPLOYEES.
By Lewis Meriam. 477 pp. 1918. Out of print.
- (2.) PRINCIPLES OF GOVERNMENT PURCHASING.
By Arthur G. Thomas. 275 pp. 1919. \$3.
- (3.) PRINCIPLES OF GOVERNMENT ACCOUNTING AND REPORTING.
By Francis Oakey. 561 pp. 1921. Out of print.
- (4.) PRINCIPLES OF PUBLIC PERSONNEL ADMINISTRATION.
By Arthur W. Procter. 244 pp. 1921. \$3.
- (5.) PRINCIPLES OF PUBLIC ADMINISTRATION.
By W. F. Willoughby. 720 pp. 1927. \$5.
- (6.) PRINCIPLES OF JUDICIAL ADMINISTRATION.
By W. F. Willoughby. 662 pp. 1929. \$5.

Service Monographs of the United States Government

1. Geological Survey. 163 pp. 1918. Out of print.
2. Reclamation Service. 177 pp. 1919. Out of print.
3. Bureau of Mines. 162 pp. 1922. \$1.
4. Alaskan Engineering Commission. 124 pp. 1922. \$1.
5. Tariff Commission. 71 pp. 1922. \$1.
6. Federal Board for Vocational Education. 74 pp. 1922. \$1.
7. Federal Trade Commission. 80 pp. 1922. \$1.

LIST OF PUBLICATIONS

8. Steamboat-Inspection Service. 130 pp. 1922. \$1.
9. Weather Bureau. 87 pp. 1922. \$1.
10. Public Health Service. 298 pp. 1923. \$2.
11. National Park Service. 172 pp. 1922. \$1.
12. Employees' Compensation Commission. 86 pp. 1922. \$1.
13. General Land Office. 224 pp. 1923. \$1.50.
14. Bureau of Education. 157 pp. 1923. \$1.
15. Bureau of Navigation. 124 pp. 1923. \$1.
16. Coast and Geodetic Survey. 107 pp. 1923. \$1.
17. Federal Power Commission. 126 pp. 1923. \$1.
18. Interstate Commerce Commission. 169 pp. 1923. Out of print.
19. Railroad Labor Board. 83 pp. 1923. \$1.
20. Division of Conciliation. 37 pp. 1923. \$1.
21. Children's Bureau. 83 pp. 1925. \$1.
22. Women's Bureau. 31 pp. 1923. \$1.
23. Office of the Supervising Architect. 138 pp. 1923. \$1.
24. Bureau of Pensions. 111 pp. 1923. \$1.
25. Bureau of Internal Revenue. 270 pp. 1923. \$1.50.
26. Bureau of Public Roads. 123 pp. 1923. \$1.
27. Office of the Chief of Engineers. 166 pp. 1923. \$1.
28. United States Employment Service. 130 pp. 1923. \$1.
29. Bureau of Foreign and Domestic Commerce. 180 pp. 1924. \$1.
30. Bureau of Immigration. 247 pp. 1924. \$1.50.
31. Patent Office. 127 pp. 1924. Out of print.
32. Office of Experiment Stations. 178 pp. 1924. \$1.
33. Customs Service. 191 pp. 1924. Out of print.
34. Federal Farm Loan Bureau. 160 pp. 1924. \$1.
35. Bureau of Standards. 299 pp. 1925. \$2.
36. Government Printing Office. 143 pp. 1925. \$1.
37. Bureau of the Mint. 90 pp. 1926. \$1.
38. Office of the Comptroller of the Currency. 84 pp. 1926. \$1.
39. Naval Observatory. 101 pp. 1926. \$1.
40. Lighthouse Service. 158 pp. 1926. \$1.
41. Bureau of Animal Industry. 190 pp. 1927. \$1.50.
42. Hydrographic Office. 112 pp. 1926. \$1.
43. Bureau of Naturalization. 108 pp. 1926. \$1.

LIST OF PUBLICATIONS

44. Panama Canal. 413 pp. 1927. \$2.50.
45. Medical Department of the Army. 161 pp. 1927. \$1.50.
46. General Accounting Office. 215 pp. 1927. \$1.50.
47. Bureau of Plant Industry. 121 pp. 1927. \$1.
48. Office of Indian Affairs. 591 pp. 1927. \$3.
49. United States Civil Service Commission. 153 pp. 1928.
\$1.50.
50. Food, Drug and Insecticide Administration. 134 pp. 1928.
\$1.50.
51. Coast Guard. 265 pp. 1929. \$1.50.
52. Bureau of Chemistry and Soils. 218 pp. 1928. \$1.50.
53. Bureau of the Census. 224 pp. 1929. \$1.50.
54. Bureau of Biological Survey. 339 pp. 1929. \$2.
55. Bureau of Dairy Industry. 74 pp. 1929. \$1.50.
56. Bureau of Engraving and Printing. 111 pp. 1929. \$1.50.
57. Bureau of Prohibition. 333 pp. 1929. \$2.
58. Forest Service. 268 pp. 1930. \$2.
59. Plant Quarantine and Control Administration. 198 pp.
1930. \$1.50.
60. Bureau of Entomology. 177 pp. 1930. \$1.50.
61. Aeronautics Branch: Department of Commerce. 147 pp.
1930. \$1.50.
62. Bureau of Home Economics. 95 pp. 1930. \$1.50.
63. United States Shipping Board. 338 pp. 1931. \$2.50.
64. The Personnel Classification Board. 160 pp. 1931. \$1.50.
65. The Federal Radio Commission. 159 pp. 1932. \$1.50.

MISCELLANEOUS SERIES

PORTO RICO AND ITS PROBLEMS.

By Victor S. Clark and Associates. 707 pp. 1930. \$5.

STEPHEN J. FIELD: CRAFTSMAN OF THE LAW.

By Carl Brent Swisher. 473 pp. 1930. \$4.

THE SPIRIT OF '76 AND OTHER ESSAYS.

By Carl Becker, J. M. Clark, and William E. Dodd. 135 pp.
1927. \$1.50.

ESSAYS ON RESEARCH IN THE SOCIAL SCIENCES.

By W. F. G. Swann and others. 194 pp. 1931. \$2.

LIST OF PUBLICATIONS

THE SOCIETY OF NATIONS: ITS ORGANIZATION AND CONSTITUTIONAL DEVELOPMENT.

By Felix Morley. 678 pp. 1932. \$3.50.

PAMPHLETS

No. 1. RECENT GROWTH OF THE ELECTRIC LIGHT AND POWER INDUSTRY.

By Charles O. Hardy. 53 pp. 1929. 50 cents.

No. 2. FIRST MORTGAGES IN URBAN REAL ESTATE FINANCE.

By John H. Gray and George W. Terborgh. 69 pp. 1929. 50 cents.

No. 3. THE ABSORPTION OF THE UNEMPLOYED BY AMERICAN INDUSTRY.

By Isador Lubin. 36 pp. 1929. 50 cents.

No. 4. SOME TRENDS IN THE MARKETING OF CANNED FOODS.

By Leverett S. Lyon. 57 pp. 1929. 50 cents.

No. 5. THE FECUNDITY OF NATIVE AND FOREIGN-BORN WOMEN IN NEW ENGLAND.

By Joseph J. Spengler. 63 pp. 1930. 50 cents.

No. 6. SOURCES OF COAL AND TYPES OF STOKERS AND BURNERS USED BY ELECTRIC PUBLIC UTILITY POWER PLANTS.

By William H. Young. 83 pp. 1930. 50 cents.

No. 7. FEDERAL SERVICES TO MUNICIPAL GOVERNMENTS.

By Paul V. Betters, 100 pp. 1931. 50 cents.

No. 8. REORGANIZATION OF THE FINANCIAL ADMINISTRATION OF THE DOMINICAN REPUBLIC.

By Taylor G. Addison. 105 pp. 1931. 50 cents.

No. 9. ADVISORY ECONOMIC COUNCILS.

By Lewis L. Lorwin, 84 pp. 1931. 50 cents.

No. 10. UNEMPLOYMENT INSURANCE IN AUSTRIA.

By Mollie Ray Carroll. 52 pp. 1932. 50 cents.