

The Institute of Bankers.

THE PRACTICAL WORKING
OF THE FEDERAL RESERVE
BANKING SYSTEM OF THE
UNITED STATES.

Four Lectures, delivered in November and December, 1929,
in the Fur Trade Sale Room, Hudson's Bay Company, E.C. 4.

BY

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By PROF. T. E. GREGORY, D.Sc.

LECTURE I.

[Delivered in the Fur Trade Sale Room, Hudson's Bay Company, E.C. 4,
on Wednesday, November 13th, 1929.]

THE PRESIDENT, MR. R. HOLLAND-MARTIN, C.B., in the Chair.

Mr. Chairman, Ladies and Gentlemen,—I am very glad to have the opportunity of addressing the members of the Institute of Bankers for one reason, if not for many, namely, that I had the privilege of getting my first instruction in the subjects of banking and currency, and of economics, under the auspices of various lecturers at the City of London College in connection with lectures arranged for the examination of the Institute of Bankers some twenty years ago, and I am delighted to be able to reciprocate the compliment this evening.

I am very glad, secondly, that the title of this course of lectures should be "The Practical Working of the Federal Reserve Banking System of the United States," because I want to begin by drawing your attention to the fact that a central banking system, whether the central banking system of the United States or the central banking system of our own or any other European country, can never be described merely by looking at the text and paragraphs of Acts of Parliament or Acts of Congress. It so happens that the volume of legislation by which the federal reserve system is governed is extraordinarily extensive, considering its youth, when one compares it with the body of legislation by which, in fact, the *modern* Bank of England conducts its operations. So that it is in fact important for a proper understanding of what the federal reserve system is, and what it tries to do, to know what the Federal Reserve Act and amendments to the Federal Reserve Act really contain. Nevertheless, young as the federal reserve system is, and important as the body of legislation by which it is governed has come to be, you cannot understand the federal reserve system merely by reading the Federal Reserve Act.

Every central banking system is a reply consciously devised to meet the circumstances—the historical and economic circumstances—of a particular environment, and consequently, although economists are fond of writing books about central banking, there is in fact not a single theory of central banking applicable to all countries at all times: there are, in fact, only central banks struggling with the difficulties of the particular historical and economic situation.

In my first lecture this evening what I really want to discuss is not so much the federal reserve system itself, or its relations with the banks and the American money market, as the economic and historical factors which have made the federal reserve system what it is tending to be. What it is tending to be is something very different from what it was originally intended to be. Just as the British Constitution has become a thing utterly and entirely unlike what the constitutional lawyers and the politicians of the 18th century thought it ought to be, so the federal reserve system is becoming something entirely unlike what the framers of the Federal Reserve Act in 1912 and 1913 thought that it ought to be. In spite of the existence of a large amount of legislation relating to it, the federal reserve system is adding to the law a whole body of conventions and of understandings, and these conventions and understandings are the product of an environment which is changing very profoundly and very rapidly from decade to decade.

Let me give you a very simple illustration derived from the history of the Bank of England. When the Bank Act of 1844 was passed, the principle of dividing the Bank of England into two departments was intended to facilitate the placing of the banking department upon exactly the same footing as that of any other bank. Peel and the Peelites in 1844 thought that by dividing the Bank of England into two departments they were, in fact, placing the banking business of the Bank of England into exactly the same position as the banking business of Lloyds Bank or any other joint stock bank. The whole difference in the spirit of the working of the Bank of England between 1844 and 1929 is a product not of law, but of custom and of convention, and exactly the same evolution, exactly the same process of steady change, is taking place at the present time in the United States. All sorts of organizations are being added to the framework of federal reserve government, which find absolutely no place in the Federal Reserve Act. To mention only one, in the actual working of the Federal Reserve system, perhaps the most important single phenomenon which one can think of is the greater and greater reliance, in the attempted control over the banking structure, upon what it is now fashionable to call the open market powers of the federal reserve system; the operations, in other words, of the system in the New York money market. The open market powers of the Federal Reserve system

are manipulated by a body called the Open Market Committee, but you may search the Federal Reserve Act from A to Z and you will find no mention of this particular committee carrying out a very important task. In other words, the practical working of the federal reserve system is something very different from the legislative instrument by which the federal reserve system was originally called into being. But nevertheless I want to-night to discuss not so much the system itself as the forces, economical and historical, and political, if you like, which called the federal reserve system into being.

I will begin by drawing your attention to certain historical factors present in the case of the United States, but not present, in consequence of the difference in geographical and historical accidents, in the case of Great Britain. Banking history in the United States, just as political history in the United States, has been most enormously affected by certain historical circumstances peculiar to the country. The first of these historical circumstances is the fact that until almost the other day, certainly almost until the turn of the century, the United States was a pioneer community, having always got at the fringe of its civilisation an area of free land. In other words, for the greater part of the history of the United States it was in exactly the same position as the Dominion of Canada is at the present time. There was an unsettled area of free land upon which settlement was still possible, and it was the genius of Professor Turner, of Harvard University, which first made clear to the people of the United States themselves the significance, in the evolution of their thought and in the evolution of their institutions, of the existence of such an area of free land. The existence of an economic frontier has meant throughout the whole history of the United States a constant opposition between the creditor spirit, represented by the banking institutions, the lending institutions of the older and more settled portions of the country, and the debtor feeling prevalent in these frontier communities, subject to paying tribute to the East. If one goes to the United States for the first time, there is one thing I think which always strikes one. It is the hostility to something which is universally known as the money power, or something which is generally called Wall Street. It does not matter in which part of the United States you are, once you pass out of the area of the local banking community you discover that the prevalent feeling is a feeling of hostility to the creditor, and that is born out of the historical circumstances of the country. It has been, and still is, almost instinctively hostile to the manifestations of the banking industry.

Now that has had exceedingly important practical consequences. The first consequence was this, that it made central banking in the United States impossible at the very moment of time when central

banking institutions in the modern sense of the word were being created everywhere in Europe. The modern central bank was born, apparently, between 1830 and 1860, the period at which the United States was gradually filling up the vacant spaces of the West; and at the very time when the Bank of England and the Bank of France were gradually learning the modern job of controlling the money market, in the United States the then existing central banking institutions were being swept away by those political forces which represented the frontier communities of the time. By about 1830 the United States had spread into what is now known as the Mississippi Valley, and it was the politicians and the statesmen born in these frontier communities who led the opposition both to the First and to the Second Banks of the United States, banks which represented in the United States of that time exactly the same sort of institution that the Bank of England represented in England of the 'twenties and 'thirties. Consequently, the first result of this hostility to the money power was the sweeping away of the first two attempts to create a central bank for the United States, and in its place there grew up a feeling that as money and monetary institutions were so important to these local communities, which were struggling for existence, therefore these local communities should have the right to control their local banking structures, and, consequently, therefore the second consequence of the pioneer spirit in the United States was not merely the destruction of the First and Second Banks of the United States, but was the creation of a whole series of experiments in banking structure. That has left its mark upon the banking system of the United States right down to the present time. The place which in Europe was taken by a central bank was taken in the United States by local banking laws. Instead of trying to regulate the money market through a central institution, subject indeed to certain general principles of law but otherwise free to work the system in a banking spirit, instead of having an organic money market controlled from a single centre, you had every State in the American Union trying to control the growth of its own banking system in any way that to it seemed best. I always say that the United States has been the great laboratory of three different kinds of experiments—experiments in fancy religions, experiments in fancy socialisms, and experiments in fancy banking systems. Anybody who attempts to study the banking history of the United States must be astonished at the variety of experiments which these 48 or 49 different States have tried from time to time, but the central point is that instead of trying to regulate the banking system by means of a strong single central institution, they have tried to regulate the banking system by means of codes of laws and by means of Government inspection. American demo-

cracy, which was hostile to banking centralisation, has not been and is not now hostile to banking regulation by means of law.

In any case, you will see that starting from this economic contention between the older and the newer communities, between the communities that lent money to the West and the West that had money lent to it, there sprang a philosophy of government and a philosophy of economic legislation which until quite recently was hostile to the creation of a central bank. I do not recommend you to read the vast and rather arid literature which sprang up between the American panic of 1907 and the passage of the Federal Reserve Act of 1913, but if you venture that experiment you will find one thing, namely, that the majority of the writers best qualified to express an expert opinion upon the trend or the desirable trend of events in the American banking field, were the writers who were most sceptical about the possibility of introducing a central bank in the United States at all. As Professor Sprague once said, in his book on Banking Reform in the United States, one of the many reasons why a central bank on the lines of the European model is impossible in the United States is that a long course of political agitation has prejudiced the public against the very people who ought to be called upon to run a central bank, if a central bank was formed. In other words, public opinion was so hostile to the banking interest that it was very doubtful whether, from the technical point of view, a central bank, even if politically possible, would be economically and wisely run. I leave for subsequent lectures the question of whether, surveying the last fifteen years of federal reserve action, Professor Sprague's judgment was on the whole right or wrong. I merely mention that to my mind the most fundamental question to be faced in surveying the historical background of the federal reserve system is this hostility, which grew up over a century and a half of economic development, the hostility to the money power and the hostility to the central bank.

Now I come to certain features of the economic situation of the United States which also and necessarily influenced the structure of banking in that country. The first of these economic circumstances is one which is obvious as soon as one reflects upon the fact that it takes almost as long, even at the present time, to go from New York to San Francisco as it does to get from Southampton to New York. The first and most obvious thing about the United States, considered as an economic structure, is the enormous diversity of its economic conditions. The type of economic life of the South is as divergent from the type of economic life of the Eastern New England States as the life of England is, almost, I was going to say, from the economic life of southern Italy. You have enormously divergent economic conditions, and

from the bankers' point of view divergent economic conditions imply one factor of very great importance. The more districts differ from one another in economic characteristics, the more certainly will the rate of interest in those different districts vary, and if you get hold of the monthly Federal Reserve Bulletin you will find a table of ruling rates of interest charged in different parts of the country, which will enable you to see at once that there is a gradual rise in the level of bankers' rates of interest as you move from East to West and as you move from East to the South. In other words, the United States is a country of great diversification of economic conditions, which makes it very difficult to impose, even if it were possible on other grounds, a uniform banking policy all over the country.

The second factor which has influenced, and still influences, the banking problem in the United States is the strongly marked seasonal character of economic activities in the United States. Every year there is a regular rhythm of banking life which is an expression of the regular rhythm of economic life in the United States itself. The loans of the banks and the loans of the federal reserve system itself always tend to fall in the first three months of the year; they tend to expand again in the spring; they tend to fall off in July and in August; they rise again in September, October and November, and tend to fall off again in late December. To what is this season rhythm in the banking process due? It is due primarily to the fact that, important as manufactures are in the economic life of the United States to-day, agricultural operations still very largely dominate the rhythm of banking and of economic life, and every banking system, therefore, must take account of the probability of seasonal swings in the demand for currency, and therefore seasonal swings in the type and volume of banking accommodation which has to be extended.

The third factor in the economic situation of the United States is one which we are not likely to forget at this particular moment of time, when we are seeing one of its consequences working itself out before our eyes. That is the very rapid annual rate of increase in the economic activities of the country, the so-called secular trend of economic expansion. Of course, statistics on a point of this sort are probably not very useful, but if you read, for instance, the volume which has recently been issued by Carl Snyder, the statistician of the Federal Reserve Bank of New York, you cannot help feeling impressed when you read that probably the long period rate of increase in economic and business activities in the United States is somewhere in the neighbourhood of $3\frac{1}{2}$ per cent. per annum. If one talks to Americans—not the average American, who has no conception of what the rate of progress is, but the statistician—you will find that he usually says that probably the

country, year in and year out, is expanding its economic activities at the rate of somewhere between 4 and $4\frac{1}{2}$ per cent. per annum ; that is to say, the country is expanding economically at a compound interest rate which means almost this, that the economic activities of the country double themselves rather less frequently than every fifteen years. If you compare that with the rate of economic expansion in Great Britain, you see the difference at once. I do not know that anybody has gone very accurately into the question of what the long period trend is in this country, but I should doubt whether it is more than 2 to $2\frac{1}{2}$ per cent. You consequently have a country the economic activities of which, and consequently the banking requirements of which, are expanding more rapidly than those of any other country in the world, and that means, please notice, that just because the economic development of the country is so rapid the possibility of wide swings upwards and downwards is always present. Just because the expansion is so great, you sometimes have the reverse of an expansion, namely a recession, and that also can be very great. I refrain at this stage from going into the question of whether the present recession in the United States is going to last till next week or until next year, but at any rate it is perfectly clear that a country with a secular trend of development of nearly $4\frac{1}{2}$ per cent. per annum must expose itself to very violent set-backs at particular moments of time.

Lastly, I want to draw attention to one factor of the economic system which goes back to these historical circumstances of which I have already spoken, but which is still an ever-present danger and difficulty in the working of the American banking system, namely, that there are still in existence a very large number of different and divergent types of banks. I spent this afternoon looking at the latest figures of the Comptroller of the Currency of the United States, which it so happens are not available for a date later than June 30th, 1928 ; but if you start with 1890 you will discover that in 1890 there were some 6,000 banks making returns to the Comptroller of Currency. The Comptroller of Currency is not the American Chancellor of the Exchequer, but is the official put in charge of that particular section of the commercial banks of the country which are under federal as distinct from State law, and which are known as the National Banks of the United States. But the other types of banks indirectly make returns to him. At any rate, in 1890 there were some 6,000 banks, of which number some 3,400 were National Banks. If you take the situation in 1920, immediately after the inflation of the war period, you discover that there were in existence not 6,000 banks, but considerably over 27,000. Out of those 27,000 banks, 8,000 were National Banks and 18,000 were State Banks, that is to say, banks chartered and

operating under the laws of one or other of the 48 States of the American Union, and about 1,400 banks were trust companies and loan companies of one kind or another. If you take the situation last year, when the great bull movement was just beginning, you discover that there had been a certain process of elimination, because there were no longer 27,600 banks: there were only in existence at that time 24,400, and of those 24,400 banks about 8,000 were National Banks, 15,000 were State Banks, and 1,600 were trust companies and loan companies of one kind or another. What you really have, and what the federal reserve system is ultimately supposed to look after, are 15,000 banks created under the laws of 48 different States, 8,000 National Banks created under the laws of the United States itself, and 1,600 banks created under the legislation of 48 States, calling themselves, not State commercial banks, but trust and loan institutions of one kind or another. If you bear in mind the fact that the federal reserve system represents the apex of the pyramid, the stones of which are cut in very different ways by very different masons, you will then begin to understand something of the difficulties which confront the federal reserve system in its control over the American money market.

Now, I approach my central problem rather more nearly than I point out to you that in spite of the existence of 48 different States and 48 different legislatures making banking laws, there are in every banking system, whether the American, British, German, or what not, certain fundamental necessities which, if not provided for by law, will be provided for by that banking system itself, as it were, by a process of natural growth and evolution. Those normal necessities of a banking system are, I think, three in number. The first is the necessity for every bank to spread its risks; the second is the necessity for some agency of support in moments of pressure, some emergency institution, or, if you have no emergency institution, some emergency device available in moments of particular pressure; and the third, and to my mind the fundamental fact, the fact which the law-makers of the United States have never been able to grasp in all its simplicity, is that the money market of a country is a single, indivisible unity, and that consequently, whether law-makers like it or not, there always will be a tendency for the spare funds of a community to flow to that place at which money will always command a price. In other words, whether you regulate a banking system or whether you do not, the tendency will always be for the banks in that banking system to spread their risks as best they can, secondly to invent some method of meeting particularly urgent difficulties at particular moments, and, thirdly, they will always tend to put surplus money into that place where that surplus money will command a price.

Now, under pre-federal reserve practice, these three necessities,

the spreading of risks, the necessity of meeting emergency situations, and the problem of what to do with surplus cash, were met in a way which caused a great deal of difficulty and aroused a great deal of criticism. A whole series of emergency institutions as a matter of fact were created to meet the particular difficulties at moments of panic. In the United States, in the absence of a central bank, in moments of panic what happened, broadly speaking, was that where possible the banks broke the law by reducing their cash reserve below the legal limit, and in so far as that was insufficient, the place of a central bank in the American banking structure was taken for emergency purposes by those particular institutions which were known as local clearing houses. The clearing houses in such centres as New York and Chicago, in fact, took over in moments of panic the task which in Europe would have been put on the Governor of the central bank: they issued emergency currency in the shape of clearing house certificates, and, in fact, the American banking system behaved in moments of panic very much as European banks would have behaved under similar circumstances: they tried to get emergency money as and where they could.

The problem of spreading the risk was met in the United States very largely by the creation of two types of money market. The first was the market, not in bills of exchange, but the market for commercial paper. If you look at the *Times* money market article as regards New York you will find that commercial paper is still being handled in the money market of New York. Commercial paper in American parlance was not two-name paper, but one-name paper, and it was always possible for the local bank, which was generally not allowed to have branches, to spread its risk partly by buying commercial paper issued by the larger firms in the United States, just as English country banks in the days before branch banks would buy bills of exchange from a brokering house in the London money market. But the second method which was adopted for spreading the risk was more open to objection. The second method of spreading the risk worked hand in hand with the tendency which I have already described as the tendency for the spare cash of the community to flow to that central money market where cash will always command a price, however small. The alternative to the commercial banks of the United States of investing their spare funds in bills or commercial paper was to invest their spare funds in the call loan market of the United States, and that meant for all practical purposes the call loan market attached to the New York Stock Exchange.

I want in my fourth lecture to deal with the question of whether the call loan market in recent years has been a danger or not to the economic existence of the American people. I want to point out that under pre-federal reserve circumstances it was almost

inevitable for the commercial banks of the United States to put their money into the call loan market, because at that time the United States was a debtor and not a creditor nation. That meant that in so far as international bills of exchange existed, the holders of those bills could finance themselves much more cheaply by discounting international bills in Europe rather than by discounting them with the ordinary commercial banks or the ordinary dealers in New York. It did not pay the holders of bills to create a bill market in those days, because European money rates were, on the whole, lower than the money rates in New York. Consequently, the logical alternative was to put your money into the call loan market, because the call loan market was a market which offered you rates on the average higher than those which you could obtain in competition with the European money markets if you took up ordinary commercial international bills of exchange. But in any case, just as the British money market in the course of the last hundred years met the need for spreading risk, and met the need for investing spare cash, by creating the branch banking system on the one hand and creating the bill market on the other, so certain institutions sprang up in the United States to meet, under the particular circumstances of time and place, exactly the same difficulties as those which were felt in the embryo banking system in England a hundred years ago; and it was the feeling that the particular institutions created under the circumstances of time and place in the United States were working unsatisfactorily, which was the ultimate cause of the creation of the federal reserve system.

If you ask yourself how in outline did the federal reserve system meet the needs which I have just described, the need for some method of spreading risk, the need of some emergency institution particularly, and the need of some way by which spare cash could always be invested at a price, the answer is that the federal reserve system tried to meet the need for some instrument of investment which would allow the ordinary commercial bank to spread its risk by the device of stimulating the creation of bills in the United States, the attempt to create a bill market in the United States; it met the need for the emergency institution by creating the federal reserve system as such, a central banking system designed to act as the bankers' bank, to provide elasticity of credit and currency at all times, including emergency times; and the genius of the framers of the Federal Reserve Act lies in this, that they managed to create an institution which attempted to combine the power of satisfying emergency needs with the power of dealing with bills, and at the same time meet the current prejudice in the United States on the subject of centralisation of banking operations. The federal reserve system is a federal structure, a federal structure

of twelve banks with a Board situated in Washington. Why was that done? That was done in order to satisfy those people who said, "We cannot have the central bank situated in Wall Street or in Washington and dominating the entire economic forces of the country: if we have a central bank at all, it must be a de-centralised central bank." Now you can see at once what the problem is. A de-centralised central bank is a contradiction in terms, because the money market of the country, I repeat, is a unitary institution, and having created the de-centralised federal reserve system, it became necessary to provide one means by which the unity of the money market, which the de-centralised federal reserve system might have destroyed, should be re-created again in the shadow of the twelve banks. The device by which, in spite of the twelve banks and a Board, you keep the money market of the United States wide, is simply the power contained in the Federal Reserve Act by which one federal reserve bank can in fact re-discount with or re-lend to another. So long as that provision remains on the Statute book, so long as the Federal Reserve Bank of New York can at a pinch re-discount for the Kansas City Bank or the San Francisco Bank, so long as the Atalanta Bank can re-discount or re-lend to the Chicago Bank, you have in fact got a unified, organic central banking system. You have defeated the politicians by inserting a seemingly innocuous clause which re-asserts and re-creates the unity of the money market of the country.

But the Federal Reserve system, although it tried to build a bill market, although it represents an emergency institution, although therefore it met two of the needs of the American money market, has to my mind been unable satisfactorily to solve the problem, - Where shall the banks of the United States put the money which they do not happen to require at a particular moment of time, but which they do want to have earning an honest penny if an honest penny can be earned? The hope of the framers of the Federal Reserve Act that the institution of a bill market, and the creation of the federal reserve system, would prevent the practice of the banks in lending money on call in Wall Street, has been shown to be a vain hope from the very beginning. It is true that in the last eighteen months, by the exercise of moral pressure and the issue of warning notes of one kind and another, the federal reserve system has been successful in keeping down the volume of call money put into Wall Street by, particularly, the member banks of the system; but it has not been able to prevent the banks which were not members of the Federal Banking system from putting money into Wall Street, and the net effect of trying to prevent the banks from controlling the call loan market has been the practice of what is now generally referred to in the United States as the "bootlegging of call money," that is to say, the practice of large corporations

outside the money market taking their deposits out of the banks and lending them in Wall Street in place of the banks. The fundamental problem: How are you going to guarantee that banks can earn the minimum amount possible, if you like, but nevertheless can earn something upon spare funds which they do not happen to want at a particular moment of time, has not been solved to my mind by the creation of the federal banking system. What the federal banking system has been able to solve is the problem of the emergency institution and the problem of the seasonal supply of currency.

Now, I have been trying to give you a picture of the economic and historical factors which historically and actually are the background of the federal reserve system. Do not think of the federal reserve system as a full-fledged miracle suddenly descending upon the heads of the people of the United States. That is the wrong way of looking at the federal reserve system. The model which the federal reserve system presumably followed was the model of the central banks of Europe, but the actual framers of the Federal Reserve Act had in their mind in framing that Act a real, concrete, definite situation, the situation, namely, which I have been trying to describe in this lecture of mine this evening. Next week I propose to discuss the actual practical relations existing at the present time between the federal reserve banks and the members of the federal reserve system.

There is an enormous literature on this subject. I do not want to bother you with more than a few headings. Much the best of the books on the federal reserve system, I think, is a book by Mr. W. Randolph Burgess called "The Reserve Banks and the Money Market," which came out in 1927. I think it is published by Harper's. Mr. Burgess is the very able assistant federal reserve agent at the New York Bank, and I think his book may be regarded as an unofficial expression of the point of view of the leading officials of the Reserve Bank of New York. It has no official sanction, but it certainly does express, I think, what the leading executive officials of that Bank think about the system and about its problems.

There is another book on very much the same lines by Mr. A. E. Goldenweiser, called "The Reserve System in Operation," which is published by the McGraw Hill Publishing Company, who have a London office, and it can be obtained from them. Mr. Goldenweiser succeeded Dr. Stuart as chief of the division of Research and Statistics of the Federal Board at Washington, but I am afraid that that book does not represent the point of view of the Federal Reserve Board: it represents the point of view of an extraordinarily able and intelligent statistician and economist on the problem, looked at from the centre of the system as a whole.

Then there are two enormous compilations which I mention to you without very much hope that you will have time to read them. One is by Mr. Parker Willis, who is Professor of Banking at Columbia University. It is called "The Federal Reserve System," and it is published by the Ronald Press. It is an enormous compilation of well over 1,000 pages, if I recollect correctly, describing very critically the evolution of the federal reserve system. Mr. Willis was the first Secretary of the Federal Reserve Board, if I remember correctly, at any rate, the first head of the Division of Research, and he is a very outspoken critic of the reserve system and of the officials who run it.

Then there is another book which I might recommend to you who are in doubt at any moment of time as to what the detailed banking practice of the federal reserve system is: I mean questions relating to the official way of making up the weekly reserve statements of the member banks, and things of that sort. That is another book by the same author, "Willis and Steiner's Federal Reserve Banking Practice," which I think is published by Appleton's. If you look at it you will find that it has about 1,000 pages, and is therefore not to be recommended to beginners on the subject.

Then there are two other books; I do not know whether they can be obtained in London or not, but they may be seen in the library of the Bankers' Institute, one by H. L. Reed, called "The Development of Federal Reserve Policy," an extraordinarily interesting and very simple introduction to the problems relating to the growth of the system; and the other is by B. H. Beckhardt, called "The Discount Policy of the Federal Reserve System." That book was published, if I remember correctly, in 1923 or 1924, it is by a pupil of Dr. Parker Willis, and it is distinctly critical of the federal reserve system.

Now, as regards official literature. There is a very large official literature, but of that official literature I want to draw your attention particularly to five items. The first is the Annual Report of the Federal Reserve Board. If it is not in the library of the Institute of Bankers it is certainly in the library of the London School of Economics, which you can use by merely presenting your card. That is a fundamental piece of official literature. Perhaps in the light of present events one ought not to say one hopes the Bank of England will be induced to publish a similar document, but nevertheless, you cannot understand the working of the Federal Reserve system without a careful study of this Report, because between the lines you get a very good idea of what the Board is actually thinking about the living problems of the system from year to year. The second document is a document known as the Annual Report of the Comptroller of Currency. That is a survey of the problem of the National Banks of the country from time to time, including an

enormous range of statistics of one kind and another. Thirdly, there is the monthly publication known as the Federal Reserve Bulletin, which is, of course, absolutely indispensable, not only to the student of American banking conditions, but of banking conditions all over the world. It is the only indispensable document, to my mind, which the present day affords. Fourthly, there is for those who are interested in the New York banking situation particularly, the Monthly Bulletin of the Federal Reserve Bank of New York, which provides an extraordinarily interesting series of special statistics by the Statistical Department of the Bank, and which presents the point of view of the New York Bank; and I need hardly point out that the point of view of the New York Bank is sometimes entirely different from that of the banks of the Middle West or the South, or, indeed, from the point of view of the Board at Washington itself. Lastly, there is a publication—I do not know whether it is available in London, but I recommend it if it is—called “The Digest of Rulings of the Federal Reserve Board.” That has a horribly official sound, but what it, in fact, contains is this, as I shall have to point out frequently, the working rules of the federal reserve system. These are partly certain regulations which are published every year in the Federal Reserve Bulletin and in the Annual Report of the Federal Reserve Board, and also certain interpretations of the Federal Reserve Act by the Attorney General of the United States and Counsel for the Federal Reserve Board, and other eminent legal authorities of that sort. The Digest of Rulings is a digest of all the rulings which have ever been made by the Federal Reserve Board as to the interpretation of the Act and the regulations issued under the Act, but in addition to that it contains the Federal Reserve Act as originally enacted, all the amendments, and the Federal Reserve Act as it stands at the present time, together with a great mass of ancillary literature of one kind and another. No serious student of the framework of the federal reserve system can get on, if he is interested in the legal side, without a copy of that Digest. I am not quite sure whether Mr. Sykes has a copy of it or not, but there is a copy in the library of the London School of Economics.

I think that is enough literature to satisfy anybody.

LECTURE II.

[Delivered in the Fur Trade Sale Room, Hudson's Bay Company, E.C. 4,
on Tuesday, November 19th, 1929.]

Brig.-Gen. A. MAXWELL, C.B., C.M.G., D.S.O., in the Chair.

Mr. Chairman, Ladies and Gentlemen,—I have received two questions arising out of the remarks which I made last week. The

first asks me what I mean by the phrase "the secular trend of "trade." If you remember, I said last week that it is estimated by American statisticians that the secular trend of economic development in the United States was between 4 and 4½ per cent. per annum. The "secular trend" is a statistical phrase which merely refers to what happens in the long run : it means practically that on the average of good and bad years there is an increase in the economic activity of the country in this particular case of about 4½ per cent. per annum at compound interest rate, which means, as I think I said last time, that the economic activities of the country have a tendency to double themselves in a period of rather more than 15 years.

The second question is rather more important, because it is not a question of definition, but of fact. I think I had better read the inquirer's query, and try to answer it : "Mr. Gregory stated in his lecture that one of the main difficulties which confronted the originators of the federal reserve system was public prejudice against centralised banking. How then has it been possible for the American public to accept the more or less recent amalgamations of some of the largest banks in the United States, which are, after all, one form of centralised banking ? I should also appreciate it, while on this subject, if Mr. Gregory would give his opinion as to whether this amalgamation fever has been made necessary by economic conditions, and whether it is likely to be beneficial to the economic life of the United States, or otherwise." I should like to give a whole lecture on the amalgamation situation in the United States, but the point, shortly speaking, is this : As far as public opinion can express itself in legislation, the tendency in the United States is to put obstacles in the way of bank amalgamations, but, of course, it is not possible completely to stop bank amalgamations. If you have two banks in New York City organised under the same laws, it is extremely difficult absolutely to prohibit a fusion of the banks ; but if you take, for instance, the Clayton Anti-Trust Act, that prevents interlocking directorates to a very considerable extent, and the Act known as the McFadden Act, you will see that legislation has prevented as far as possible the extension of the branch bank system in the United States. Therefore, in so far as public opinion can express itself, it does, I think, show a decided antipathy to the amalgamation movement. If you ask me whether on the whole the amalgamation movement is good for the United States or the reverse, I should be inclined to say there must be some relationship between the size of the business unit in general and the size of the average bank. If you take, for instance, firms like Ford's, or General Motors, or the United States Steel Corporation, and so on, they are now conducting their business on a scale which is so great that the banks which have to deal with them must

increase in size : there must be some relationship between the size of the average bank and the size of the business which those banks are intended to assist. In those circumstances I personally believe that the real danger to the United States lies more in the fact that the average banking unit is rather too small than in the circumstance that some of the larger banks are getting very much larger. That is a personal opinion. There is a good deal of difference of opinion in the United States itself, but I should say, on the whole, just as you must have in the modern world larger units generally, so you must also have larger banking units ; but I think that these economic factors do not invalidate the statement that on the whole public opinion in the United States was, and is, hostile to bank amalgamations on a large scale. The idea of a branch bank system, such as is operated by the Big Five, fills the average American with frank horror, rightly or wrongly.

What I want to deal with to-night is the relationship between the federal reserve system and the commercial banks of the country, not with the money market in the technical and narrower sense of the word, but with the wider area covered by the commercial banks of the country.

The federal reserve system is connected with the commercial banks through a whole series of circumstances, of a somewhat miscellaneous character. In the first place, the federal reserve system is owned by the commercial banks in the sense that the capital and reserves of the twelve federal reserve banks have been subscribed by the member banks, and the federal reserve system is owned, therefore, by the subscribing banks. In that respect you will notice the federal reserve system differs very markedly from the system in this country. In the second place, the federal reserve banks are connected with the commercial banks through the fact that the reserve banks now carry, compulsorily, the reserves of the member banks. The third link between the two sets of institutions lies in the fact that the reserve banks are a considerable source of loaning power, that is to say, the member banks borrow very largely from the reserve banks. The fourth link is provided through the circumstance that the federal reserve system now represents an enormous clearing agency for the commercial banks of the country. Fifthly, under the Federal Reserve Act the federal reserve system is given certain supervisory and examining powers over its members, to which there is no parallel in this country at all.

I want to begin by discussing the ownership aspect of the federal reserve system, because in many ways that is the most novel feature of the American situation. The 12 Federal Reserve Banks, and the 24 branches of the Federal Reserve Banks, are owned by those particular commercial banks which are described as the member banks of the federal reserve system. Now what are the member

banks? The member banks form themselves into two main groups, one representing a compulsory adhesion to the system, the other a voluntary adhesion to the system, and in order to explain precisely what is involved, I must deal very shortly with some technical aspects of American banking history.

In the pre-federal reserve era (just as to-day), the banks of the country fell for commercial purposes into three main groups, namely, a group of banks chartered under Federal legislation, that is to say, central legislation, and known as the national banks; in addition to the national banks there were the commercial banks, chartered under the legislation of the States of the Union, so-called State banks; and lastly, there was a group of banking institutions, and there still is a group of banking institutions, known as the trust and loan companies, which were, and are, governed by the legislation of the various states.

The position as regards membership of the federal reserve system is this: since the national banks are governed by central or federal legislation, the national banks are compulsory members of the federal reserve system; that is to say, every newly organised national bank must become a member of the federal reserve system, must become a member bank, alternatively, any national bank which refuses to adhere to the federal reserve system *ipso facto* loses its national bank status. Consequently, as far as the national banks are concerned, there is no option about joining the system at all, and, as I shall presently show, the overwhelming membership of the system is that of the national banks. So far as the state commercial bankers and the trust and loan companies are concerned, membership of the federal reserve system is optional on their part, and the tendency in this particular respect is for membership of the federal reserve system by state banks and by trust and loan companies rather to decline than to increase.

Since the membership of the federal reserve system is partly composed of compulsory members and partly composed of voluntary members, there are a series of statistical and other problems which arise at once. The first is this: What proportion of the total banking strength of the United States is organised under the federal reserve system; in other words, what proportion of the total number of banks, and what proportion of the total resources of the American banks, are directly involved in the existence of the federal reserve system? Secondly, what tendencies are manifesting themselves with regard to membership of the federal reserve system? Thirdly, what incidental changes in the United States banking situation are resulting from the existence of two classes of banking institutions, one compulsory members of the system, the other voluntary members of the system?

As regards the first of these questions, what proportion of the

total banking strength of the country is organised under the federal reserve system, I can give you figures as recent as those of the 30th June of this year. On the 30th June, 1929, the total resources of the member banks of the federal reserve system amounted to the almost incredible figure of 45 billion dollars—about 9 thousand million pounds. Of that figure of 45 billion dollars, the resources of the national bank members came to 27½ billion dollars, and the resources of the state bank members came to 18½ billion dollars. Proportionately, therefore, of resources, 60 per cent. were controlled by national banks and 40 per cent. by state banks. But if you look at the situation not from the standpoint of resources controlled, but from the standpoint of numbers, a very interesting situation emerges. On the 30th June of this year there were in the federal reserve system 7,530 national banks. At the same time there were in the federal reserve system about 1,177 state banks. So that although the national banks controlled 60 per cent. of the resources, and the state banks only controlled 40 per cent. of the resources directly associated with the federal reserve system, nevertheless the membership of the system was composed to the extent of 86 per cent. of national banks, and to the extent of only 14 per cent. of state banks and loan and trust companies. The natural inference, of course, is that the average state bank or trust and loan company, which is a member of the federal reserve system, is a larger institution than the average national bank belonging to the system.

If you want to find out what proportion of the total resources of all banks in the United States is associated with the federal reserve system, the only answer I can give you relates to certain figures published last year. On the 30th June, 1928, the aggregate resources of all reporting banks in the United States, that is to say, all banks making returns to the Comptroller of the Currency, amounted to 71 billion dollars, or 14 thousand million pounds. The aggregate resources of all member banks, state and national together, in June of last year amounted to 45 billion dollars, that is to say, about 63 per cent. of the total banking resources of the United States were controlled by banks which were members of the federal reserve system. But if you ask what proportion of the total number of banks are members of the federal reserve system, you get a very different picture. Last year, in June, there were about 8,900 member banks, and 17,200 banks not members of the federal reserve system. So that one can put it very shortly in this way, that the members control about two-thirds of the resources, and are themselves about one-third in number of the total banks of the country. You must not fall into the mistake, which people are frequently guilty of falling into, of thinking that the federal reserve system, or the

member banks of the federal reserve system, represent not only a very large fraction of the total banking resources, but also a very large fraction of the total number of banks in the country. That is not so. The average small bank in the United States, if it is not a national bank, has usually nothing to do directly with the federal reserve system at all, and its relations to its old correspondents in cities like Chicago and New York have, practically speaking, not been affected by the existence of the federal reserve system.

What has been the tendency with regard to membership of the federal reserve system? The tendency has been for the total number of banks in the federal reserve system to fall off, partly because there has been a tendency for national banks in the United States to lose ground relatively to state banks. If you read the Annual Reports of the Comptroller of the Currency, the official who has been put in charge of the national banks of the United States, you will find a series of lamentations on the relative decline of the national banking power of the country as compared with the power of the state banks and the loan and trust companies. Not only is the total membership showing some tendency to fall off, partly because the number of national banks in the country is decreasing, but there is in addition a very strongly marked tendency for the number of state banks who are members of the federal reserve system to decline; and there is a large and interesting literature relating to the causes of these developments. Some of them are purely statistical in character. If two banks amalgamate, then the federal reserve system, if they were both previously members of the federal reserve system, registers one bank as having left the system in consequence of the merger, but it does not indicate or mean that the strength of the system has been reduced because two banks have amalgamated and become one. But there have been cases in recent years of national banks converting themselves from the national bank status to the state bank status, and, having converted themselves in this way, have left the federal reserve system altogether.

There are a good many reasons why it does not pay, especially from the standpoint of the smaller state banks in the United States, to become members of the federal reserve system, one of which I will tell you straight away. Since membership of the federal reserve system involves keeping reserves compulsorily at the federal reserve bank, and since the federal reserve system pays no interest on those deposits, a small bank finds that if it joins the system and transfers part of its deposited reserves, let us say, from the Metropolitan Bank of New York City to the Federal Reserve Bank in New York, then it is actually losing money over the transaction. In the second place,

of course, the minimum requirements resting upon a member of the federal reserve system may be sometimes, and in certain cases are, greater than those which rest upon the small non-member state banks in the Western communities, where banking standards are not very high, and until quite recently one of the reasons, the most potent in some ways, why national banks tended to convert into state banks was that the national banking code of the United States was very biased against the creation of branches by national banks, whereas the state banking codes in states like California are very favourable to the creation of the branch bank system. The result was that banks would hesitate whether they would remain under the national banking code if it meant that state banks could create a state-wide system of branch banking, and so readily absorb resources formerly held by small banks with no branches at all. In short, it is not by any means certain yet that the number of banks associated with the federal reserve system will always remain as large even as it is at present. There was a time, during and after the war, when it was a matter of prestige for a bank to belong to the federal reserve system. It used to be regarded as a good advertising point, to put it in that way, to head your stationery and so on with the statement, "Member of the Federal Reserve System." It was regarded also as a matter of patriotism that every bank should concentrate as far as possible its cash reserves in the hands of the federal reserve system, so as to build up the nationally-owned stock of gold. But these considerations are beginning to wear somewhat thin, and there is not the same enthusiasm for belonging to the federal reserve system as a compulsory or voluntary member as was the case five or six or perhaps seven years ago.

When a bank becomes a member of the federal reserve system it is obliged to subscribe a certain proportion of its capital to the capital of the federal reserve bank of the district in which it happens to be situated. Under the Federal Reserve Act, each bank is supposed to contribute an amount equal to 6 per cent. of its paid-up capital to the capital of the local federal reserve bank, though in practice only three per cent. is required. The result is that the federal reserve banks have no fixed capital: their capital goes up and goes down with the total membership and with the capital of the total membership. But in return for a contribution to the capital of the local reserve bank, the member banks in each one of the twelve districts have the right to elect two-thirds of the directors of the Federal Reserve Bank. The directors of the Federal Reserve Bank are divided into three classes, respectively known as A, B and C directors. The A directors, three in number, are selected as direct representatives by the member banks of that particular district; the B directors, though chosen by the member

banks, represent business interests in the district; and the C directors are chosen by the Federal Reserve Board; and nobody may be a banker except the Class A directors. This provides a directorate very different in character from the directorate of the central bank of this country.

Now I come to the reserve position under the Federal Reserve Act, and here again I must preface my remarks with a certain amount of historical information. Under the national banking code of the United States, a distinction was drawn between three different classes of banks situated in three different areas:—Banks situated in certain cities known as central reserve cities—they were actually three in number, Chicago, St. Louis and New York; banks situated in so-called reserve cities; and banks situated neither in reserve cities nor in central reserve cities, but outside these areas, and known as country banks. Each had different reserve requirements. In other words, the National City Bank in New York City, for instance, had to keep a cash reserve of 25 per cent. and had to keep that reserve of 25 per cent. actually in cash on the premises, as "cash in vault," to use a technical American expression. Banks in reserve cities, and banks outside reserve cities, technically known as country banks, were similarly required to keep certain reserve ratios, but, as distinct from banks in central reserve cities, these banks were allowed to keep part of their compulsory reserves in the form of deposits with national banks either in reserve or alternatively in central reserve cities. For instance, if you take a small national bank in the backwoods of Wisconsin, it was allowed to keep a certain proportion of its compulsory reserve with a bank in Milwaukee, and the bank in Milwaukee was allowed to keep a certain proportion of its reserve with the bank in Chicago; but the bank in Chicago was not allowed to keep a certain proportion of its compulsory reserve with a bank in New York City, because Chicago was itself a central reserve city. In other words, you had under the banking structure of pre-federal reserve days a distinction between central reserve cities, reserve cities, and non-reserve cities, outside those areas, in which the banks were known as country banks. These distinctions only applied to the national banks, but the code which was framed by the United States Government in the 'sixties and 'seventies, and called the National Banking Code, served as a model very largely for the state banks, with the result that all over the United States you had the practice of banks keeping part of their cash reserve not on the premises at all, but in the shape of deposits with other banks.

What was the result? The result was that almost without knowing it there developed in the United States a situation very similar to the situation which grew up in Europe, where the leading commercial banks of Europe started keeping their cash reserves not in

cash in their own vaults, but in the form of cash deposits at the central bank. It was notorious that in pre-federal reserve days a group of six or seven national banks in New York City in fact held the greater part of the actual stores of cash for the entire banking system of the United States. Without knowing it, a particularly specialised and American kind of centralised banking structure had grown up. A good many dangers were associated with this system. The danger was that in every moment of panic the country banks called for their deposits from the reserve city banks, and the reserve city banks called for their deposits from the central reserve city banks, with the result that the entire strain of any money market panic of the United States was, in fact, thrown on to the not very broad shoulders of the six or seven larger national banks in New York City, and their cash reserves were in fact inadequate to meet the strain very often, whence you get the fact that almost every financial panic was accompanied by either partial or complete suspension of cash payments by the banks of the United States.

I mention that because this was the pre-federal reserve system situation. What is the situation now? The situation now is this: so far as the member banks of the federal reserve system are concerned, they must keep the whole of their reserves with their local reserve banks. That is the actual situation, which was only very gradually reached. The original draft of the Federal Reserve Act, the first form of the Federal Reserve Act, as it was enacted in December, 1913, continued the policy of insisting upon the member banks keeping part of their reserves on their own premises, but in consequence of the desire to strengthen the central stores of cash during the war, there developed a policy, which is now 100 per cent. effective, of insisting upon member banks keeping the whole of their compulsory cash reserves at the federal reserve bank. But whilst this has the disadvantage from the standpoint of the member banks that they no longer get interest on their deposits, whereas their deposited reserves under pre-federal reserve banking conditions brought them in an average return of 2 to 2½ per cent., the new condition has this advantage from the standpoint of the member banks, that the amount of compulsory reserves which member banks are required to keep is considerably less than it was in pre-federal reserve days.

There is a formula which it is very easy to remember on this particular point. It is a formula of 13—10—7. If you think of 10, and deduct 3, and add 3, you get the ratios applying to the net demand deposits of the three classes of banks which are still known as country banks, reserve city banks, and central reserve city banks. As far as the demand deposits of the member banks in central reserve cities are concerned, they are obliged to keep a cash reserve of 13 per cent. at the reserve bank of their district; if they are in

a reserve city they have to keep a cash reserve of 10 per cent. ; and if they are a country bank they have to keep a reserve ratio of 7 per cent. against their demand deposits. "Demand deposits" is a technical term. It is a term of art and of law, and it is necessary to explain it. The United States Government deposits, for instance, are not included in the net demand deposits against which reserves have to be kept at all. Then there are various exceptions to be made with regard to what is technically known as the "float" for the clearing house, that is to say, cheques on other banks, and so forth. Broadly speaking, on demand deposits, which are deposits payable within 30 days subject to certain exceptions and rules, the ratio of 13, 10 or 7 respectively has to be kept. On deposits payable after 30 days' notice, a reserve of only 3 per cent. has to be maintained by the member bank at the local federal reserve bank.

These changes have had some extraordinary results, and I wish to impress these results upon you. In the first place, since the present reserve ratios are considerably lower than those in force before the federal reserve system was created, the net effect of the federal reserve system has been to allow of a considerable expansion of credit on the part of the commercial banks of the United States. I think, on the whole, cutting down the reserve requirements was justified, because the reserves are very much more effective under the federal reserve system than the larger reserves were under the pre-federal reserve banking practice. But do not let us disguise the fact that one of the reasons for such popularity as the federal reserve system enjoys has been the fact that it has enabled, by and large, the average commercial banker in the United States to get a larger profit out of the working of his bank than he could have done before, because it has involved the cutting down of his cash reserves.

The second consequence of these technical rules has been a very startling increase in the total volume of time deposits held by the commercial banks of the United States. Take a bank in New York City, if it holds 100,000 dollars on current account in the form of demand deposits, it has to keep a reserve at the federal reserve bank of 13 per cent. If it goes to a customer and says, "Why do not you put this on time, and we will pay you 3½ per cent." they can immediately cut down their cash requirements from 13 per cent. to 3 per cent. In those circumstances, you notice, it may actually pay banks to induce their customers to transfer their accounts from demand deposits to time deposits in spite of the fact that on time deposits they have to pay interest and on demand deposits they do not. A very eminent British banker some time ago drew certain pessimistic deductions from the growth of time deposits at British banks in recent years. In the case of the United States there has been an exactly similar

development. Time deposits have been growing much more rapidly than demand deposits. The explanation is perfectly simple. It has paid the commercial banks of the United States to encourage time deposits rather than demand deposits because of the reduction in the reserve requirements which they had to hold against them. Whether this is a desirable state of affairs or an undesirable state of affairs is another matter. In effect this undue growth of time deposits means that the effective reserve maintained against the effective deposits of the country has really been weakened. In other words, the law has really been abused. But a slight change in the amount required to be kept against time deposits, or even cheaper money, which makes time deposits less attractive from the standpoint of the bank, may correct that situation within a relatively short period of time.

Now let me draw your attention to one feature of the American banking situation which is not sufficiently understood in this country. In this country the joint stock banks, taking them by and large, keep certain conventional cash ratios against their demand and other liabilities. So do the banks of the United States; but the banks of the United States have always made it a practice to keep their cash reserves down to the very minimum upon which the law insists. The danger of the pre-federal reserve situation in the United States was that even those banks which were really acting as central banks to the entire banking structure, the banks of New York City, did not keep an excess reserve large enough to meet the exigencies of panic. Since the Federal Reserve Act has been passed, any study of the member bank balances at the federal reserve banks will convince you at once of the fact that the average bank in the United States never holds at the reserve bank more than it is absolutely obliged to do in order to conform to the requirements of the Federal Reserve Act. Not only that, but there has developed in New York City a specialised kind of money market, a kind of money market which deals not in stocks and bonds or bills of exchange, but in a commodity known as reserve money, as "federal money." In other words, any bank which finds itself with rather more money at the Federal Reserve Bank of New York than it requires, will at once lend it out in the street to any particular bank that happens to be short of money at the federal reserve bank on that particular day. It evens up the situation over the entire system; but it has the net effect that banks do not keep more at the federal reserve bank than they are absolutely obliged to do. Why should they? There is this defence of the situation in the United States, that under the American central banking practice a member bank can always obtain the amount of reserve it requires by borrowing from the reserve bank. If, for the sake of argument, a New York national

bank was 50,000 dollars down on the day on its reserve balance, all that it need do is to go to the reserve bank in New York, and, being in good standing at the New York reserve bank, find itself with the necessary reserve which it wants. So long as the federal reserve banks are in a position to lend to the member banks, in other words, so long as the federal reserve banks have still a margin of available lending power, it does not really matter whether banks have more at the reserve bank than they require or whether they have their minimum, as far as the technical situation is concerned. They can always put themselves right merely by borrowing.

But, unfortunately, there are signs not only that nearly all banks keep down to their minimum, but that some banks are below their minimum, and there has consequently developed at times a demand that the technical method of assessing the reserve position of each particular member bank shall be screwed up. As the situation actually is, it is perhaps a little complicated to explain. The reserve position of each particular bank is not uniformly treated by the reserve bank authorities. Banks in reserve cities, in central reserve cities, and country banks, are made accountable for a reserve position differing from case to case. The central reserve city banks have to account for their reserve on a bi-weekly basis, and the country banks on a semi-monthly basis, the position being this, that if it is discovered that a particular bank has a deficient reserve, it is penalised for its deficient reserve, and if it does not amend its ways, in the long run the federal reserve bank of the district to which it belongs can punish it by charging very high re-discount rates, and ultimately by throwing it out of the system altogether. There have thus developed certain irregularities with regard to the reserve situation. Under the Federal Reserve Act, and indeed under the National Banking Act, a bank which does not keep its required reserve is legally (though not actually), required not to do any more banking business at all, but things are not taken quite as seriously as all that even in the United States.

I come to the third aspect of the situation. I want to discuss the lending relations between the reserve bank and the member banks. Now this leads one to a discussion of the question which is generally described as the "eligible paper" question; in other words, a discussion of the technical requirements relating to commercial assets which the member banks are allowed to transfer for re-discount purposes to the reserve bank. For those of you who are interested in the technicalities of the thing, it is governed in specific terms by Section 13 of the Federal Reserve Act. Broadly speaking, the situation would be this: a member bank can borrow directly from the federal reserve bank of its district in two ways, and in two ways only. In the first place it can turn in to the

federal reserve bank bills and promissory notes of certain classes which it has taken from its customers, in other words, it can turn customer paper into eligible paper at the reserve bank. The general requirements are that bills and notes so turned over to the federal reserve bank must be drawn for commercial, industrial or agricultural purposes, and that commercial paper, drawn for the purpose of trading in stocks and shares, is not eligible for discount by a member bank at the federal reserve bank, unless the paper in question is collateralized by stocks and bonds of the United States Government. In any case, one way by which the federal reserve bank can extend credit to a member bank is by means of re-discounting bills of exchange and eligible promissory notes which the member bank has in its turn acquired from its customers.

Here, again, a certain amount of historical knowledge may be useful. There developed in the United States in the days after the American Civil War the practice of borrowing, on the part of the average customer of the bank, not against bills of exchange or by the discount of bills of exchange, but by the presentation to the banker of single-name commercial paper. In other words, the average evidence of indebtedness which the banker held against the customer was the customer's promissory note, and one of the real difficulties about the formation of the federal reserve system was whether single-name paper of this kind could be turned into a document which the central bank could legitimately hold. The answer simply is that single-name paper of this promissory note kind is turned into two-name paper when it gets to a federal reserve bank, because the reserve bank requires the endorsement of the member bank before it will be discounted.

The second way in which a member bank can borrow from the reserve bank is relatively recent in the history of the federal reserve system. The member bank can borrow from the reserve bank on its own promissory note, provided that that promissory note is covered by collateral of certain specified kinds, namely, the kinds made eligible under the Act for discount in general; and the result is that in practice, as distinct from theory, when federal reserve banks are lending money to their member banks, you will find that in the overwhelming volume of cases they are in fact extending loans to member banks on the member banks' own promissory note rather than against a note handed in by a customer and endorsed by the member bank.

The figures at the end of the year are, of course, not necessarily typical, but I took out, this afternoon, the figures of the holdings of bills discounted by the federal reserve banks at the end of 1926, 1927 and 1928, with the following results: at the end of 1928, for instance, the federal reserve banks at the end of the year held about 1,056 millions of discounted bills. (May I just interpose that this is

not their total holding of bills of exchange, because they bought a lot of bills in the open market. These are discounted bills.) They held about 1,056 millions of discounted paper. Of that amount, 215 millions only represented commercial, industrial and agricultural paper, promissory notes and bills of exchange of the kind handled by the customers of the member banks. Apart from these 215 millions of commercial, industrial and agricultural paper, the federal reserve banks held what are technically called member bank collateral notes, that is to say, promissory notes endorsed by the member banks and collateralised in various ways, to an amount of no less than 839 millions, and of these 839 millions, 658 millions were secured by United States Government securities, and 181 millions were secured by documents of title of other kinds.

What it all comes to is that something like 62 per cent. of the total amount borrowed at the end of the year by member banks of the federal reserve system from the reserve banks was represented by promissory notes created by the member banks themselves, and secured by United States Government securities.

A very interesting point therefore arises. You will remember that there are various English banking authorities who view with some apprehension the entire disappearance of Government securities. They need not worry too much about it as things actually are, but they do worry about the disappearance of Government securities, because Government securities are such good collateral when you are borrowing from the banker. In the United States the problem is much more serious than it is in this country, because if everything goes well the National Debt of the United States will disappear in the next 25 years. The question then arises: If, in general, member banks now borrow on the whole from their reserve banks on the basis of United States securities, backing their own promissory notes, what is going to happen to the federal reserve system when this particular form of eligible collateral will no longer be available to the same extent? As I say, there is another 25 years in which to consider this problem, but some of my professional colleagues in the United States are already nervous as to what will happen when the evil day arrives.

In any case, the important point is that the member banks of the federal reserve system borrow on the whole rather on their own promises to pay than on their customers' promises to pay. You may ask, "What is there to prevent the member banks from 'borrowing more and more as time goes on'?" The answer is that the federal reserve banks are protected by a double line of defence. The first is the fact that they can, of course, raise the re-discount rate charged to member banks. How effective the discount rate of the federal reserve banks is as a method of checking loans is exceedingly difficult to say. There is one characteristic in which

American commercial banking differs very markedly from English commercial banking. The tendency in the United States is to keep commercial rates charged to customers very steady year after year. Over a large part of the United States I may say that commercial banks are prohibited by law from charging more than a certain amount. In other words, there are still usury laws effective against bankers in the United States. The natural tendency is that the banker charges just as much as the law allows him to charge. If the particular state fixes seven per cent. as the limit, the banker charges seven per cent. year in and year out. When things are going badly he discriminates between good customers and bad customers; when things are going well, he is generous even to the man whom he would not look at in difficult times. But you have not got in America generally, although you have to a certain extent in New York City, the system by which overdraft and loan rates move up and down in precise proportion to the fluctuation of the discount rate of the central bank. Consequently, in periods of cheap money, the margin between customer rates and bank rates goes up, in periods of dear money the margin between customer rates and federal reserve rates goes down, so that the margin of profit diminishes. But, I think, on the whole, American authorities are inclined to agree that movements of the federal reserve rate are not an effective weapon in the hands of the federal reserve system against over-borrowing by member banks; they rely upon other instruments of control.

The first is the tradition, which is very strong among commercial banks of the United States, that the commercial bank ought not to re-discount and ought not to be continuously in debt. If you read Mr. Burgess's book on the "Federal Reserve Banks and the "Money Market," you will find that he places great reliance on this particular tradition as effective against over-borrowing by the banks as a whole. But the real point is that behind this façade presented by a rising and falling re-discount rate, the federal reserve bank has one instrument which is exceedingly potent. There is nothing in the Federal Reserve Act itself which says that a single member bank shall have the right to borrow. The right to discriminate against a bank which is borrowing too much, or a bank which is continually borrowing, is in the hands of the federal reserve bank. Merely because you are a member bank of the federal reserve system, and because you want to borrow, does not necessarily lead to the situation that you are entitled to borrow as much as you would like to have.

In other words, in the case of the federal reserve system *vis-à-vis* the member banks, I think the really effective instrument of control by which they check over-borrowing is not the federal reserve re-discount rate, but the tradition against continual borrowing,

which is potent among member banks themselves, and the right which the federal reserve banks actually have of refusing to extend any more credit to a particular banker if they think he has been continuously and too largely in debt.

As a matter of fact, the tendency is for the average period of borrowing by the member bank from its particular federal reserve bank to be a very short period indeed. Between 1926 and 1928 it has varied between 5.37 and 5.53 days; that is to say, the average length of time for which a member bank is in debt at the reserve bank is about $5\frac{1}{2}$ days, or say, one week. In that respect I suppose there is not so very much to choose between the 7-day loans of the Bank of England and the $5\frac{1}{2}$ -day or 6-day loans, as they are, in fact, of the federal reserve banks of the United States. There has also been a tendency in recent years for the number of banks borrowing from the federal reserve system rather to fall off than to increase. In 1921, the great year of pressure and strain in the American money market, 7,400 banks borrowed from the federal reserve banks. By 1927 the number had fallen for that year from 7,400, which was the peak, to 4,800; and in 1928 the number had actually fallen again from 4,800 odd to 4,700 odd.

Now, there is one last question about which I want to say a word or two to-night, namely, what are the conditions which lead to an increased or decreased borrowing by member banks at the federal reserve bank? I am going to look at this problem in the reverse direction in a subsequent lecture when I deal with federal reserve policy; I am now looking at it from the standpoint of the causes which lead to an increased demand for credit at the reserve bank. I think one can describe it under four different heads.

First of all there are the currency requirements on the part of the public. Since the average commercial bank in these days in the United States keeps an extraordinarily small cash balance in hand, and since the average commercial bank of the United States, as I have already tried to show you, keeps only the minimum reserve required of it under the Act, whenever you have a seasonal increase in the demand for currency, that at once leads to increased borrowing at the federal reserve bank, just as in the periods when currency flows back from circulation into the commercial banks, the commercial banks at once pay it back to the federal reserve bank in order to decrease the amount which they have borrowed when they took the currency out.

The second main factor leading to changes in the amount of reserve and credit required is alterations in the gold stock of the United States. The increase of gold inflow into the United States puts the federal reserve member banks out of borrowing at the reserve bank, because if a bank like the National City, or the Guaranty, or any of them, get half a million in gold from Europe,

they get, when they sell the gold to the United States mint, a cheque on the books of the Federal Reserve Bank of New York, and if they have been borrowing previously they get out of debt, and if they have not been borrowing previously they have an excess balance at the Federal Reserve Bank. In both cases they require to borrow less rather than more.

In the third place, there are the requirements which I have already tried to explain of the minimum reserve. When particular banks find their reserve balances are falling down, they increase those reserve balances for the time being by additional loans from their local reserve bank.

The fourth factor is, if you like, an indirect factor: it depends upon federal reserve policy itself. At times when the federal reserve banks are buying actively in the open market, whether Government securities or bankers' acceptances or what not, they find that this reduces the tendency of their member banks to borrow at the reserve bank, just as when the Bank of England is extending credit in London you find the brokers are able to pay back loans, because the volume of floating money in the market is increased. At periods when the federal reserve banks are selling securities in the open market, they know now that they can usually force the banks in the money market centres into the reserve bank. In other words, perhaps the two most potent influences affecting reserve bank credit are currency movements on the one hand and federal reserve open market policy on the other. Whether one can define these things a little bit more, and show in detail how the open market policy reacts upon the commercial bank policy, I will leave over to next week, because next week I want to deal with the question of the relationship of the federal reserve system to the money market in the strictly technical sense of the word.

LECTURE III.

[Delivered in the Fur Trade Sale Room, Hudson's Bay Company, E.C. 4,
on Wednesday, November 27th, 1929.]

SIR ALFRED E. LEWIS in the Chair.

Mr. Chairman, Ladies and Gentlemen,—I think I will begin by answering the solitary question, or rather, set of questions which has reached me. The questions are as follows—they all bear on the same subject and can be very easily answered—"What did Professor Gregory say is the effect of the State usury laws on the "effectiveness of the Federal Reserve rate?" The answer to that is that the Federal Reserve Banks are not, so far as I know, subject

in any way to limitation on the rate of interest imposed by State legislation, because the Federal Reserve Banks are in fact chartered under Federal legislation, so that by the United States constitutional practice State legislation does not affect them. Secondly, I am asked: "Are not the usury laws neutralised by (a) competition when money is easy, and (b) evasion when rates are high?" The answer to that is, of course, that when money is cheap the tendency is to reduce rates; in the more remote rural districts of the States, where alterations in rates are not easy because what the banks once give away they may not find it easy to resume—when money is easy the tendency, of course, is for the conditions upon which loans are granted to become easier than they were before. When money rates are high the way in which the usury laws work themselves out is perfectly simple. The banks practise discrimination amongst their customers, and in addition to that they impose stricter conditions. The simplest way in which you can work out discrimination under United States banking practice is simply to increase the minimum balances which borrowing customers are expected to keep at the bank. It has always been the practice of United States banks, so I understand, to insist upon the retention of a minimum balance, even while an overdraft or loan is being granted. If you want to evade the usury laws, the simplest way to do it is to demand that a particular customer, who is borrowing, say, 100,000 dollars, instead of keeping 10 per cent. of the loan constantly on deposit at the bank shall keep 20 per cent., and he is charged 7 per cent. on the entire amount. The effective rate of interest is thus considerably higher, and you can evade the usury restrictions by the charging of commissions and by other elements of service charges of one kind or another, which, in fact, bring the effective rate up above the legal minimum. As regards the position of New York brokers, there I am not quite clear what the legal position is. I believe (although I do not want you to pin any faith on what I am saying because the legal position is obscure to me), that call loans to the Stock Exchange in New York are exempted from the operations of the New York laws relating to usury. Upon that particular point I am not quite certain.

Now, the subject I want to discuss this evening is the Federal Reserve system in relation to the American money market. In every country the money market, in the narrow technical sense, is, of course, from the banker's standpoint, and also from the standpoint, if you like, of the economist, the most important single element in the whole banking situation, because the money market, in the technical sense of the word, is the place where the strain on the banking system is first felt in periods of pressure, and it is the place where ease in the banking system is first felt in periods of

monetary superfluity. In other words, money market rates fluctuate more rapidly and more sensitively than rates in the wider field of banking contacts generally do, because it is in the money market that all surplus money is first placed for investment, and it is from the money market that all funds are first taken in periods of pressure. In other words, the money market of every country represents the air cushion receiving all the pressure which is exerted from outside on that particular economic and banking structure, or, to use a good American phrase, it is the job of the money market to take up the slack, that is to say, to find employment for those funds which cannot find employment elsewhere, and to provide the reserve sums which find more profitable employment elsewhere if the rate is in an upward direction.

It was the position of the New York money market in the total structure of American banking and economic life which was, perhaps, the main single cause leading to a demand for banking reform in the United States. Owing to the fact that the commercial banks of the United States were allowed, under pre-Federal Reserve legislation, to re-deposit a part of their compulsory reserves with other banks, and owing to the fact that these other banks paid interest on bankers' deposits, the tendency was for the money market in New York to be, if you like, at the mercy of the entire commercial banking structure of the United States. Every autumnal pressure in the agricultural districts, every period of marked industrial activity, was accompanied by considerable variations in the volume of bankers' deposits available for employment in the New York money market, and, since the New York banks, or rather, since the banks in the Reserve Cities as a whole, paid about 2 per cent. interest on bankers' deposits subject to call, the tendency was to employ these bankers' funds in that particular institution which always wanted money at a price at call. That institution was the Stock Exchange. I gave reasons in a previous lecture for showing that, even if there had been in pre-war days a properly organised bill market in the United States, it is not likely that the average United States bank would have invested its spare funds in bills, because at that time bill holders would have found it easier to discount bills in the European money markets rather than discount them in New York. The result was that the entire surplus, or practically the entire surplus, funds of the American banking system poured in and out of the New York money market, which for practical and effective purposes very largely meant poured in and out of the call loan market, and was therefore at one and the same time a cause of the remarkable instability of the New York Stock Exchange price level, and was in itself influenced by the instability of the New York Stock Exchange price level.

I want to begin by pointing out that, although a great deal of water has flowed under London Bridge since the introduction of the Federal Reserve system, the Federal Reserve system has not succeeded in destroying the very intimate connection which formerly existed and which still exists between the surplus funds of the American banks and the New York money market. I will give detailed figures to prove my point with regard to bill holdings later on. But let me merely point out that every official return relating to the position of the commercial banks of the United States still reveals enormous amounts due by the New York banks to correspondents all over the country. If you take, for instance, the Report of the Comptroller of the Currency relating to the position of the "reporting" banks in the United States for June, 1928, you find that there was due to banks on that date last year in the aggregate no less than 4,000 million dollars, or, let us say, 800 million pounds, whilst on the same date there was due from banks an amount of 6,700 million dollars, or about 1,340 million pounds. That is to say, there was still a very considerable volume of scattered bank deposits moving about from one bank to another, and finally concentrating itself in New York City. The mere institution of the Federal Reserve system has not destroyed the pre-Federal Reserve practice of accumulating a very considerable secondary reserve, one may call it, by commercial banks in the shape of spare deposits with other commercial banks. There are very solid reasons for that. The most immediate reason why that is so is that you do not get interest on deposits from Federal Reserve banks, and, consequently, the average commercial bank, even if it is a member of the Federal Reserve system, cannot resist the temptation of employing every spare penny productively outside the Federal Reserve banks. In any case it is quite clear that the general principles which are true of all banking structures are true also of the United States, that the New York money market is the sensitive spot in the organisation of the American banking system, just as the London money market is the sensitive spot in the organisation of the banking structure, practically speaking, of the British Empire, and indeed, of a large part of the world.

The next question that arises is, what is the structure of the New York money market? Every money market, as you know, is divided up into a series of sub-markets. In this country the most important sub-division of the London money market is the bill market and the volume of call money which is related to the bill market. In the United States it is extremely easy, at any rate, at the present time, to say what is the most important single sub-market in the New York money market. It is not the bill market. It is the call loan market in which loans are extended

against Stock Exchange collateral. In addition to the vast volume of funds poured into the Stock Exchange on call against Stock Exchange collateral, there is a money market for 60 to 90 days' time money, also secured by Stock Exchange collateral, and one of the significant things, one of the indices of an approaching recession, shall we say, in the New York Stock Exchange, is when there is a tendency for the volume of call loans to decline and for the volume of time money on the Stock Exchange to go up. The reason for that is perfectly simple. When people sense that the situation is getting a little bit out of hand the call money is withdrawn first, and that necessarily increases the proportion of time money to call money employed in the New York Stock Exchange, but nevertheless the most important market in recent years, and undoubtedly the most important sub-market, has undoubtedly been the call market. Now, traditionally, there is a sub-division of the New York money market, which bears some resemblance to the British bill market: that is the market which is generally described as the market for commercial paper—the commercial paper market, in which prices are quoted as the commercial paper rate. The commercial paper market is the market for promissory notes, the single-name paper of large industrial and manufacturing firms all over the United States. Commercial paper in the American sense is not two-name or three-name paper. Commercial paper in the American sense is quite definitely single-name paper issued in round amounts by prominent industrial and commercial and manufacturing firms. Before the creation of the Federal Reserve system the commercial paper market, practically speaking, was the only rival of the call loan market as a method of constantly investing and turning over the secondary reserves of the commercial banks. At the present time, however, in addition to the market for commercial paper there is a third market which in general structure resembles the London bill market, namely, the market for bankers' acceptances. Commercial paper is handled by a group of firms known traditionally as note brokers. Bankers' acceptances are handled by a group of firms known at the present time as dealers, but of course the firm may be a dealer both in commercial paper and in bills of exchange, and indeed, in short term Government indebtedness. But, in addition to the commercial paper market there is now a market in bankers' acceptances. There is, fourthly, a growing market in Government and other short dated securities of that kind resembling, if you like, in general purpose and in spirit, the sub-division of the London bill market, which handles Treasury bills and Exchequer bonds and other evidences of Government indebtedness.

So you have these five markets: the market for call money, the market for time money against Stock Exchange collateral, the

market for commercial paper, the market for bills of exchange, bankers' acceptances, and the market for Government securities.

I want next to draw your attention to the fact that in recent years—one does not yet know whether it is going to be permanent or not—the number of bankers' acceptances outstanding in the United States has been rising very rapidly and the volume of commercial paper outstanding has been declining. If you take, for instance, the average amount outstanding per month in 1927, there was outstanding on the average about 848 million dollars of bankers' acceptances, say, about 170 million pounds. In the same year on the average there was outstanding per month about 585 million dollars of commercial paper, say, about 116 million pounds; in 1928 the average outstanding amount of bankers' acceptances rose from 848 million dollars to 1,073 million dollars, whereas the volume of commercial paper outstanding fell from 585 million dollars to 494 million dollars; and, if you take the figures for the first five months of this year, the average monthly amount of bankers' acceptances outstanding rose again from 1,073 million dollars to 1,186 million dollars, whilst the amount of commercial paper outstanding fell from 494 million dollars to 372 million dollars. There is, in other words, a clear tendency for the volume of commercial paper outstanding to decline and for the volume of bankers' acceptances outstanding to increase. That is partly due to the fact that commercial paper cannot be re-discounted at the most favourable rates at the Federal Reserve banks, whereas bankers' acceptances can; and also I think the decline in the volume of commercial paper outstanding in recent years can be associated with changes in the current practice of American business men, at a time when you have to pay, let us say, between $5\frac{1}{2}$ per cent. and $7\frac{1}{2}$ per cent. to get commercial paper discounted, and you can sell common stocks to the American investor to yield nothing at all except the hope of appreciation. Of course, the wise business man then makes hay while the sun shines, and finances himself by sales of newly issued securities, and does not finance himself by the sale of what is or what may prove to be an exceedingly expensive short-dated document. Therefore, I say, one is not quite certain whether in the future this decline in the commercial paper volume, which has been so characteristic a feature of the last few years, is going to continue. It depends, I think, in part upon the attitude of mind of the average American investor.

So far I have been trying to deal with the commercial structure of the money market. It is true that, in addition to putting surplus deposits into the New York market, and indirectly into the call market, American commercial banks, even before the War, tended to hold commercial paper, and in addition to that they tended to hold either American Government or American railway and

other bonds and securities, and in the case of the National Banks, they were obliged to hold United States bonds if they wished to issue notes. But the banking literature of the United States of America, in surveying American practice, has always emphasised the enormous importance to the American banking structure of the call loan market, and has always resented the disturbance which might arise in the American banking world from the flow of funds into the local New York stock market.

I now turn to discuss the relations of the New York money market to the Federal Reserve system, and in this respect I should like to begin by pointing out that almost from the very beginning of the discussion relating to the organisation of the Central Bank of the United States the possibility and the necessity of linking up the Central Bank with the open market was very widely discussed. If you read, for instance, those very remarkable essays by which Mr. Paul Warburg, who is now the Chairman of the International Acceptance Bank, tried to make the technical banking public in the United States understand the necessity for a Central Bank, you will see that he attached an enormous amount of importance to the fact that the Central Bank should have the right to deal, not only with the commercial banks of the country, but also with those international dealers in bills of exchange, who would keep the Central Bank in close contact with the movement of money and of bullion between New York and the rest of the world. The emphasis upon the necessity for building up the bill market was stressed for two reasons: one, to provide an alternative method of investment for the commercial banks; the other, to prevent a draining of gold from the United States in periods when the balance of trade was adverse to the country. If anybody reads modern American banking literature, he cannot fail to be struck by the fact that the existence of a superfluous stock of gold is taken so very much for granted that modern writers on American banking have almost completely forgotten the real reasons for which the erection of the Central Bank was advocated in pre-war days, but if you read pre-war literature written by Americans on the problem of the Central Bank from the American standpoint, you will come to the conclusion that one of the reasons why they wanted to create a bill market and why they wanted to create a Central Bank was to prevent the gold stocks of the United States from being threatened every time that the balance of trade was adverse to the United States, and therefore writers like Warburg and others wanted a Central Bank with power to buy international acceptances both in the United States and elsewhere, in order that when a drain of gold took place this Central Bank or these Central Banks might have a reserve of international bills which they could rediscount in Europe for the purpose of preventing a drain of gold

from New York to London, Paris, Berlin, or whatever the centre might be. In other words, emphasis was placed upon the creation of an international American acceptance market for reasons entirely different from those which would be advanced at the present time. For instance, if there was no international acceptance market in New York now, I take it the average American writing on these subjects would now advocate the creation of an international bill market on the ground that New York now possesses such a large proportion of the world's gold that competition between the American bill market and the London bill market, in the creation and discount of acceptances, would pay the United States. In the far-off days of 1907 to 1913 the creation of a bill market was advocated on very different grounds indeed. In other words, the original reason for the creation of an international acceptance market in New York was connected originally with the reserve practice of American banks and with the international position of the United States, when the United States was on balance a debtor, and not a creditor, country. But in the course of the actual life of the Federal Reserve system the relations of the Federal Reserve system to the open market have become the dominating and central factor about the whole structure of the system. More and more the working policy of the Federal Reserve system turns round the relations of the Federal Reserve banks to the open market, rather than upon the relations of the Federal Reserve banks to the commercial banks. I think you will find, if you examine the actual money market position, not only in the United States but in every European country, very much the same thing to be true, that in the modern world the Central Bank has to have extremely intimate contact with the money market in the technical sense of the word, because the technical money market is so much more responsive to movements in rates and to movements of opinion than the banks in the widespread territories of modern countries are ever likely to be. In any case, in the United States it is the open market policy of the Federal Reserve system which attracts more and more attention, and it is primarily that aspect of the situation that I now desire to discuss.

First of all, what is the mechanism of the open market policy of the Federal Reserve system? That mechanism divides itself technically into three different aspects. In the first place, so far as bankers' acceptances are concerned, the Federal Reserve system does not take the initiative, but leaves the initiative to the holders of acceptances; that is to say, to the member banks who happen to hold bankers' acceptances as reserves, or to the bill dealers who have a turnover in bills, a stock of bills exactly as the bill brokers would have in London. When the Federal Reserve bank wants to deal with a member bank which desires to sell bankers' acceptances,

or with the dealer who desires to sell bankers' acceptances, it stands ready to buy bills at a rate which is, as a rule, lower than its official discount rate, but which is at times higher than its official discount rate, and is known as the Federal Reserve Bank's "buying rate for acceptances." Every Federal Reserve bank has a buying rate for acceptances, but the acceptance business and the holding of acceptances tends to be concentrated, as is perfectly natural, in the larger centres. If you look, for instance, at the list of 40 largest acceptors of bills in the United States, you will see that with two or three exceptions all the largest accepting houses, whether they are technically national banks, or private banking firms, are all situated in New York City, and it is the New York Reserve Bank's buying rate for acceptances which primarily comes into account here, though there are some very large accepting houses in Boston, and the Boston Bank is also an active buyer of acceptances. The Federal Reserve Bank of a particular district will fix a rate at which it stands prepared to buy those particular classes of bills which come under the technical rules of the Federal Reserve system as eligible acceptances under the open market powers of the banks.

In addition to a buying rate for acceptances, acceptances can be turned into a Federal Reserve bank, can be sold, if you like, to a Federal Reserve bank, under so-called re-purchase agreements. Those of you who were here last week will remember that I pointed out that the largest proportion of borrowing by the member banks from the Reserve banks took place at the present time in the form of loans secured by United States Government bonds in virtue of so-called collateral note borrowing. The dealers in the New York money market are just like the brokers in the London money market. They do not want necessarily to sell long bills to a bank if they only want to borrow money for a relatively short period of time. They therefore finance themselves, if they think that rates are going to fall rather than rise, by borrowing from the Federal Reserve Bank of New York under a re-sale or re-purchase agreement. A re-purchase agreement, stripped of all its technicalities, simply amounts to an agreement that the Federal Reserve Bank of New York will buy these bills for a maximum period of 15 days, at the end of which the borrowing dealer, or the borrowing bank, will agree to buy them back again, and the important question is, not what the re-purchase agreement legally is, because you will see it is equivalent to a loan secured by a banker's acceptance, but the rate charged under the re-purchase agreement. The Federal Reserve system is extraordinarily generous as a rule with its information. If you look at the Annual Report of the Federal Reserve Board, you will be astonished at the variety and wideness of the information that is presented, but you will not find mentioned in the Annual Report of the Federal Reserve Board the rates charged under

re-purchase agreements to dealers in the open market. I understand that re-purchase agreements were introduced partly for the purpose of enabling a very struggling industry to hold its head above water. You have to remember that, after all, the creation of the bill market in the United States was a new and struggling industry. The brokers were not educated up to standing losses as our London brokers are popularly said to be, and they very much objected, therefore, to turning in paper to the Reserve banks at losing rates. The argument is that the re-purchase agreement allows them in fact to turn in paper to the Federal Reserve banks at roughly the market rate. So there is no profit, no loss. But whether that is so or not, I have not been able personally to ascertain. At any rate, that is the popular story, that the Federal Reserve banks thought it was their duty to nurse the bill market, and that one of the ways in which they could nurse it was to allow to the big dealers in bills re-purchases and sales at a stated price, namely, at the market price.

As regards the bankers' acceptance buying rate, you will find as a rule that it tends to be something like $\frac{1}{8}$ th to $\frac{1}{10}$ th above the market, that is to say, if the market is discounting at $4\frac{1}{4}$ the Federal Reserve Bank buying rate for acceptances will be in the nature of $4\frac{1}{2}$, or something like that. There is, however, in addition to these two methods by which Federal Reserve money is poured into the money market, a third method, and the third method is much more novel, and in the policy aspect of the Federal Reserve system perhaps very much more important, that is, the Federal Reserve operations in Government securities. Now, there is a wide class of Government securities which the Federal Reserve banks are allowed to buy and sell. You will find them all mentioned in Section 14, sub-section (b), of the Federal Reserve Act. I will not read you this extremely complicated piece of legal phraseology, except to say that as a general rule the Government securities which the Federal Reserve banks may purchase and sell are confined to securities with six months' maturity. The important point about the Reserve banks' operations in various classes of Government securities is this, that they are system operations, to use the technical term, and that their purchases and sales of Government securities reflect the attempt on the part of the Federal Reserve system to control the money market from time to time. Let me explain what I mean by both these phrases. By a "system operation," I mean that the Federal Reserve Bank of New York, at which bank most of these operations take place, is not operating exclusively for itself, but is operating on behalf of the Federal Reserve system as a whole, and is carrying out the technical operations necessary under the instructions of a Committee known as the Open Market Committee of the Federal

Reserve System, and the securities so bought and so sold are debited and credited to a special account known as the Special Investment Account of the Federal Reserve System. In other words, operations in Government securities of a specified kind are undertaken by the New York Bank, but are undertaken by the New York Bank under the directions of the Committee acting for the Federal Reserve system as a whole and with express rights, and limitations upon those rights, fixed by the Federal Reserve Board. The reason why this special arrangement was insisted upon is perfectly simple. If you look at it you will see it is in direct contradiction to the idea that you can have twelve Federal Reserve banks each acting in the Government securities market of its own sweet will. In 1922, when there was a period of very cheap money in the United States, some of the Federal Reserve banks thought that they could make an honest penny by investing some of their spare funds in Government securities bought in the New York and other money markets, but they discovered, very much to their surprise, that every time they increased the volume of their purchases of Government securities, that the member banks were paying back loans contracted at the Reserve Bank in the shape of discount and other advances. In other words, every time the individual Federal Reserve banks poured additional Federal Reserve money into the money market they were surprised to find this money coming back in the shape of repayment of loans to the Federal Reserve banks themselves. In other words the familiar principle, that when a Federal Reserve bank or Central Bank buys with cash it puts banks out of debt to itself, began to operate on a very large scale. Therefore, from 1922 onwards, it became necessary to co-ordinate these Government purchases and sales of securities in order to prevent a perfectly inorganic situation in the Government securities market, and from 1923 onwards, the five Governors of the five big Federal Reserve banks in the East, who had been operating the system for some time, were directly linked up with the Federal Reserve Board and became, if you like, an Executive Committee operating in the Government securities market for the Federal Reserve system as a whole.

We, fortunately, possess the Resolution of the Federal Reserve Board on the question of system operations in the Government securities market. The Federal Reserve Board in 1923 passed the following Resolution :—

“ 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 sales on the general credit situations.

“ That in making the selection of open market purchases, careful

“ regard be always given to the bearing of purchases of United States Government securities, especially the short-dated issues, upon the market for such securities, and that open market purchases be primarily commercial investments, except that Treasury certificates be dealt in, as at present, under so-called ‘ repurchase ’ agreement.

“ In order to provide for the proper administration of the policy defined above, the board rules that on or after April 1st, 1923, the present committee of governors on centralised execution of purchases and sales of Government securities be discontinued, and be superseded by a new committee known as the Open Market Investment Committee for the Federal Reserve system, said committee to consist of five representatives from the Federal Reserve banks and to be under the general supervision of the Federal Reserve Board: and that it be the duty of this committee to devise and recommend plans for the purchase, sale and distribution of the open market purchases of the Federal Reserve banks in accordance with the above principles and such regulations as may from time to time be laid down by the Federal Reserve Board.”

From that time onwards, as I shall have occasion to point out next week, the Federal Reserve system, in its attempts to bring the market into line with its own rates, or with the intention of cheapening money in the money market, has usually in the first instance acted through the Open Market Investment Committee of the Federal Reserve Board. It has usually been able to try and force money out of the market, and it has usually been able to try and put money into the market in the first instance not by operating upon the discount rate, but in the first instance by operating upon the market for Government securities, and indirectly, therefore, upon the volume of funds in the open market. How far that can go, what the limit upon the open market policy, in the sense I have just defined it, is, I shall have to leave over till next week. It is clear that you cannot operate to deflate the money market of funds when you have sold all your Government securities, and there was a moment in the early summer of this year when it rather looked as if the last shot had been fired in this particular direction by the Federal Reserve banks, that they were on the point of exhausting their Government securities, and the whole system of controlling the market by means of purchases and sales of Government securities would *ipso facto* have broken down. (There may indeed be critics of the Federal Reserve system who assert that the Federal Reserve control over the money market practically broke down, in any case, in the last two years.)

Having mentioned these three channels through which Federal Reserve money pours into the money market, I now want to discuss

a question of very great complexity and difficulty which I cannot avoid mentioning, although, if I may be quite frank, I have not made up my own mind about it, and I doubt whether any of my professional American friends have made up their minds about it, and that is the question of the place of Federal Reserve rates, and in particular Federal Reserve open market rates, if one may so call them, in the permanent structure of the American banking system. There is a school of critics of the Federal Reserve system in the United States which argues that all and every Federal Reserve rate ought to be what they call a penal rate, that is to say, that the Federal Reserve bank should always, for any type of accommodation it gives, charge more than the same amount of accommodation would cost outside the Federal Reserve bank. In other words, if a member bank is lending to its own customers on eligible paper at 6 per cent., then the Federal Reserve rate in that particular district ought to be at least 7 per cent., or 8 per cent., in order to prevent any particular bank from making a profit out of turning in eligible paper to the Reserve Bank. Again, if the open market rate for discounts is $4\frac{1}{2}$ per cent., then these critics argue that the open market buying rate for acceptances ought to be at least 5 per cent., so that no bank shall be able to make a profit by turning in acceptances bought at one price and re-discounted at another at the Federal Reserve bank, and so forth. In other words, there is a school which argues that Federal Reserve banks ought to follow what those American writers understand to be the practice of the Bank of England, and to prevent any American bank or institution whatever from making a profit by borrowing directly or indirectly from Federal Reserve banks. This is the celebrated controversy, which, as I say, has not been settled in anybody's mind, as to what the rate structure ought to be.

Now, I think there are two questions which one can properly ask about this controversy, not only with regard to the Federal Reserve system in its relation to the American money market, but with regard to the relations of any Central Bank to its money market. The first question is whether the Central Bank, assuming the rate structure to be what it actually is, can force changes in the market by varying its own rates. When we talk about the Bank of England rate being effective or ineffective, we are in fact asking this: Can we force the market to alter its rate because the Bank of England has altered its rate? When people ask: Is the Federal Reserve rate structure effective? they are really asking themselves this question: Will an alteration in any one of the Federal Reserve rates lead to an alteration in the other rates presumably governed by the former rate? The second question, which is sometimes confused with the first, but which is really entirely different, is this: Is the structure of the rate system in the New York money market

an organic structure in the sense that variations of one rate will be accompanied by variations in other rates, however the original variation has been caused? In other words, one can ask this question, both of the New York money market, and indeed, of any money market: If there is an alteration, for instance, in the rate at which bill brokers are prepared to borrow from joint stock banks, will that necessarily and inevitably result in variations in all associated series of rates, of which the call loan rate of the bill brokers is only one? The first is a question of how far the Central Bank can be master in its own money market. The second is a question of how far the money market is master in its own money market: how far the whole structure of rates determines the rates involved, and how far the rates involved determine the structure. That is what I mean by asking, how far are the rates in the New York money market organic and how far are rates in the New York money market dominated by changes in the practices and policies of the Federal Reserve banks?

My answer to these questions, broadly speaking, is this: a change in the discount rate of the Federal Reserve Bank of New York is not necessarily immediately effective, but can be made effective so long as the Federal Reserve system possesses the necessary resources by means of which it can absorb funds from the open market. In other words, if the Federal Reserve banks put up the rate from 4 per cent. to 5 per cent. and the market rate of discount, instead of following, drops (something like the situation which we have been talking about in London of recent months), then the Federal Reserve system can at a pinch cause the other rates to follow, so long as it has securities which it can sell, because if the discount rate goes up from 4 per cent. to 5 per cent. and if at the same time the bank alters its purchasing rate for open market acceptances, we will say, from $3\frac{1}{8}\frac{5}{8}$ ths, that is to say, nearly 4, to $4\frac{1}{8}\frac{5}{8}$ ths, and at the same time sells Government securities through the Open Market Committee, it can always force some dealer or some bank or some broker or some banking house to borrow at the new rate, provided—and this is the essential point—that it has enough resources at the time that it initiates a policy of dearer money to force somebody into the bank; but no Central Bank, including Federal Reserve banks, can cause the market to obey its requirements if it has not got, behind the moral pressure which, as we all know, Central Banks are fond of bringing to bear, also the pressure which it can exert through the sale of some of its open market assets. I think, therefore, as far as one can judge of past experience, the Federal Reserve system can usually make its rates effective if it likes, but whether the rate will always become effective and how quickly it becomes effective is entirely a question of the technical money market situation at the moment

when the action in the direction of higher rates and dearer money begins. If, for instance, the Federal Reserve banks try to put up the Federal Reserve rate from 4 per cent. to 5 per cent. at a time when the banks are not borrowing from the Federal Reserve Bank and at a time when it has a very small holding of securities, of course, the immediate result is absolutely nothing at all. The effectiveness or rapidity of response, in other words, depends upon the technical situation, but, as far as one can judge, so far the banks have had enough shot in their locker to be able to enforce their rates if they thought an enforcement was desirable. On the other hand, there is no doubt that money market rates in New York are organic in the sense that a movement in one of the rates is accompanied by movements in the others. It is true that the relative position of the various rates differs from time to time. In periods of extreme pessimism with regard to the future of securities, prices in the New York money market, call loan rates, fall very low, that is to say, call loan rates secured by Stock Exchange collateral, and the call loan rate represents, if you like, the lowest rate in the market. I do not want to commit myself to this statement in perpetuity, but I am inclined to think that is where the call loan rate ought to be. It ought always to be the lowest rate in the market, because it obviously represents that particular form of money which the lending bank or lending institution can get back most quickly, and the borrower ought, since he is subject to paying back at what might be a very inconvenient moment, to have the advantage of a low price for his money. But if you survey the position of the call loan rate in the New York money market in recent years, you will find that it has not been the lowest rate in the New York money market; on the contrary, it has been the highest. If you take, for instance, the position at the week ending September 28th of this year, that is to say, about the time when the stock market first showed signs of serious weakness, you will find that prime commercial paper, that is to say, this single-name paper of which I have spoken, was selling in New York at $6\frac{1}{4}$, that prime bankers' acceptances were being dealt in at $5\frac{1}{2}$, but that time loans secured by Stock Exchange collateral were fetching 9 to $9\frac{1}{4}$, and that call loan rates on the New York Stock Exchange were varying between 9 and $8\frac{1}{4}$ per cent. In other words, the technical structure of the rates was that the call loan rate, instead of being, as it has been at times, the lowest, was the highest rate in the market. But it does not follow from this that because the relative positions of different classes of rates relatively to one another have varied, that therefore when there is a movement in one rate there will not be a movement in another.

At this point I shall have to leave this particular aspect of the situation to turn to one other question which an examination of

the situation reveals. The point is this : a great deal of legislative energy and a great deal of technical skill have been devoted to the task of building up a bill market for bankers' acceptances, particularly in the United States. What has been the success of all this effort ? There is no doubt at all about one question : a large volume of bills is constantly outstanding. It is, of course, subject to seasonal fluctuation. It is always highest at this time of the year and tends to be lowest in the spring, but that is simply due to the fact that cotton and grain crops are moving forward in the world's wholesale markets at the present time. It is, at any rate, clear that there is a large outstanding volume of bankers' acceptances, but the really important question is not whether you can create a negotiable instrument which you can increase in volume because it can be sold at favourable prices, but whether you can induce bankers to hold these negotiable instruments preferentially as a form in which to invest their secondary cash reserves.

Now, if you go into the question from this angle, you are substantially asking this question : what proportion of the outstanding negotiable instruments known as bankers' acceptances is carried at any particular moment of time by banks in the United States other than the Central Bank ? Of course, the Central Bank stands ready to buy at a stated price practically an unlimited quantity of these instruments. What has been the success of the agitation for creating the bill market, so far as willingness of bankers to hold these bills as an investment is concerned ? I am bound to say that I think the answer to this particular question is somewhat disturbing. If you take the situation in 1928, before the worst period of mania on the Stock Exchange, the position was that something like 56 per cent. of the total volume of outstanding bills at any particular moment of time was being held not by the commercial banks of the country at all, but by the Federal Reserve system or by the foreign correspondents with whom and for whom the Federal Reserve system has been acting. Every year you will find in the annual report of the Federal Reserve Board an exceedingly interesting table, showing the outstanding volume of bankers' acceptances held by the Federal Reserve system, and at the same time the outstanding volume of bankers' acceptances held by foreign correspondents with the endorsement of the Federal Reserve banks. If you look at this tabulation you will find that in 1927 foreign correspondents, acting through the Federal Reserve system, held 18½ per cent. of the average monthly outstanding volume of bankers' acceptances in the United States, and in 1928 this figure was raised from 18½ per cent. to 25 per cent. ; that is to say, something like a quarter of the outstanding volume of bankers' acceptances in the United States last year was being financed, not by the money of United States bankers at all, but by

the money either of European or other Central banks, other than the Federal Reserve system itself. The Federal Reserve system plus the foreign correspondents were, as I have said, carrying 56 per cent. of the entire outstanding volume of bankers' acceptances. If you ask why this situation has arisen, of course the answer is simplicity itself. The average American banker, aware of the fact that the Federal Reserve Bank could not morally allow the banking system to go to pieces whatever happened in Wall Street, has, of course, been encouraged to earn 6, 7 and 8 per cent. in Wall Street, and to leave the European or other correspondents of the Reserve system to finance the bankers' acceptances at very much lower rates. In other words, I think this problem arises. Would it really have been necessary to the campaign against an exaggerated Stock Exchange boom for the Federal Reserve Bank deliberately to discriminate against call loans and therefore to raise the price of call money, if it had fully taken into account the fact that discriminating against call loans meant that a larger proportion of the total volume of bankers' acceptances created in the United States would have to be carried by extra-American institutions? I do not think it is generally realised what a very large proportion of American business has really been indirectly financed through the purchase of acceptances in New York by European and other Central Banks. In so far as high call loan rates attract bankers' money into the Stock Exchange the campaign against high amounts of call money has really to my mind defeated itself, though that is a very disputable point. What is not disputable is that in the last two years the tendency has largely been for the American banking world to throw the task of carrying and financing bankers' acceptances on to the Federal Reserve system and to the other Central banks with whom the Federal Reserve system is in touch.

If you look at the last monthly bulletin published by the Acceptances Council of New York, you will see that the situation has been altering very rapidly in the last few weeks, and one of the consequences of the break in the New York stock market has been to develop a nation-wide demand for bankers' acceptances. The rates for first-class bankers' acceptances have been falling very rapidly. It may not be a permanent feature of the American situation that something between 20 per cent. and 25 per cent. of the total volume of bills should be carried by foreign correspondents of the Federal Reserve system, but at any rate, those have been the facts of the situation in the last two years. I cannot help thinking it is one of the extraordinary and unconsidered consequences of the imaginative character of the American people.

LECTURE IV.

[Delivered in the Fur Trade Sale Room, Hudson's Bay Company, E.C. 4, on Wednesday, December 4th, 1929.]

Mr. F. HYDE in the Chair.

Mr. Chairman, Ladies and Gentlemen,—The subject that I want to discuss this evening is the most difficult of all the topics that I have ventured to touch upon in this course of lectures. I want, as far as I possibly can, to interpret Federal Reserve policy to you. What is Federal Reserve policy? A distinguished witness, namely, Dr. Stewart, of the Federal Reserve Board, as he then was, once gave this answer to a Committee of Congress which asked him whether the Federal Reserve system had a policy. The test, he said, "of whether or not the Federal Reserve system has a policy" is whether or not it has developed a procedure by which it can "deal with situations as they arise." I have not time in an hour to deal with the very multifarious situations in which the Federal Reserve system has found itself since its creation at the end of 1913, and I have to paint my picture with a rather broader brush than I would have been able to do if this course had extended to thirty instead of only to four lectures. I have to try and sketch as best I can what seem to me to be the important points, if one wishes to judge of Federal Reserve policy in recent years.

To begin with, what does the problem of Federal Reserve policy really consist in, or, if you like, what is the area which is covered by such a phrase as Federal Reserve policy? It seems to me there are at least six, if not more, aspects from which this question has to be surveyed.

The first is a purely technical but very important aspect of the situation. If we blame, or if we praise, a central bank for expanding or contracting credit, according to whether, to use a phrase of Mr. Keynes, we are born little inflationists or little deflationists, obviously the first point which arises is: What are the technical limits of expansion under the *de facto* legislation in terms of which that particular central bank is actually operating? We can ask, for instance, of the Bank of England: What are the limits to which, given the will, the bank could expand credit? We have to ask that question, not only of our own particular central bank, but of any other central bank, and in this particular connection, of the Federal Reserve banks.

In the second place, we have to ask: What are the instrumentalities through which Federal Reserve policy is conceived and carried out? We talk about "Federal Reserve policy." There are, in fact, twelve Federal Reserve banks, and there is in addition the Federal

Reserve Board. Consequently, when one discusses Federal Reserve policy, what is one discussing? Is one discussing the view of the Governors of the Federal Reserve Banks or of the Governor of the Federal Reserve Board? What is it that makes and constitutes the instrumentality conceiving of a policy and then carrying it out? Sooner or later, behind these vague phrases such as the Federal Reserve system, or the Federal Reserve banks, you have to come up against individuals, and it is exceedingly interesting to ask—very difficult to answer—who makes Federal Reserve policy now, and who has made Federal Reserve policy in the past?

The third aspect of the question is covered by what I call the mechanics of Federal Reserve action; that is to say, the particular technical channels which indicate the necessity for an expansion or a contraction of Federal Reserve credit. What are, if you like, the technical indices which decide the Federal Reserve system in expanding or contracting credit at a particular moment of time? I do not mean by the mechanics of the system something which I will call guides to Federal Reserve action, for reasons which I will explain in more detail. There are certain technical necessities which arise under every banking system, but it does not follow that these technical necessities must lead either to an expansion or to a contraction of credit. The central bank, whether of this country or of the United States, is always ultimately faced by a question of moral responsibility, and it is in deciding whether moral responsibility requires an expansion or contraction of credit that there come into play what I call the guides to Federal Reserve action, those wider considerations which every central bank has constantly to bear in mind, whatever the technical situations in its money market from moment to moment may happen to be.

The fifth, and in some ways, of course, the most important of the aspects under which one can conceive of the problem of Federal Reserve policy, is what one might call the objectives of Federal Reserve policy; that is to say, a discussion of what the Federal Reserve system really wants to do. Upon that particular subject, I may say, a very wide variety of opinion exists, but it has obviously to be considered. What are at the present time the objectives of Federal Reserve policy; are they to kill any boom on the New York Stock Exchange; are they to assist European money markets in struggling with the return to the gold standard; are they to assist American business, or what are they? In other words, every central bank policy involves a consideration of long-run points of view, long-run objectives, and necessarily, these long-run objectives may change from time to time.

Lastly, one comes to an aspect of Federal Reserve policy which one may call the effectiveness or ineffectiveness of the policy, whatever it happens to be, and as you are probably well aware from an

inspection of the daily newspapers, this is the aspect of Reserve Bank policy which is most popular with the Press and with the general public. It is always easy to point out that if A or B or C had been in charge of a particular central bank at a particular moment of time credit would have been available in unlimited quantities and at infinitely low rates. To judge of the effectiveness of central bank policy requires, of course, an understanding of what the objectives of central bank policy are. You cannot accuse a man who wants to go to B for not having been at A. In other words, before one can criticise Federal Reserve policy, or central bank policy in general, one has to understand what a particular central bank is aiming at at a particular moment of time. Consequently, I am afraid you will hear very little from me about the effectiveness of Federal Reserve action, because I will be perfectly frank and say that it is by no means clear to me what in recent months the objectives of Federal Reserve policy have really been.

First, I come to the purely technical consideration, namely, the limit of credit expansion under the existing legislation by which the Federal Reserve system has to operate. The Federal Reserve banks are the most celebrated modern examples of central banking institutions, working under conditions permitting of great elasticity both as regards credit expansion and as regards currency expansion. But I should like to point out to those of you who may perhaps be under the impression that the Federal Reserve system departs radically from the constitution of our own central bank, that there are certain vestiges attaching to the Federal Reserve constitution which remind one of the constitution and the limitations upon the powers of action of the Bank of England. That is most particularly marked by the fact that in the original Act, the Act of 1913, the note issue powers of the Federal Reserve banks were placed under the supervision directly of an official known as the Federal Reserve Agent, and ultimately the power of issue, or rather the power of determining how many notes the Federal Reserve system as a whole should issue, was left in the hands of the central body at Washington, which is known as the Federal Reserve Board. Originally, it was intended that Federal Reserve notes should be specially protected by a segregation of particular assets, and that the volume of Federal Reserve notes should be ultimately determined by the Federal Reserve Board. The Federal Reserve Board was given power in the 1913 Act to determine how many notes each of the twelve Federal Reserve banks should be allowed to have, and was also allowed under the 1913 Act to charge each individual reserve bank a rate of discount, or rate of interest, for the notes which it obtained. Had that Act been carried out in the spirit and the letter, you might have had the Federal Reserve system developing something very like the

division between the issue department and the banking department with which we are familiar in this country ; but it so happens that the power given to the Federal Reserve Board to determine what volume of notes each particular bank might issue, and the rate of interest it was to pay for that particular volume of notes, was never acted upon, with the result that, from the very beginning, an element of convention crept into the actual working of the note issue powers of the Federal Reserve system.

Now the Act allows, as I say, a very considerable elasticity of credit arrangements. The position is this : Under Federal Reserve legislation a Federal Reserve bank is allowed a minimum reserve against its notes of 40 per cent., or, as it is very often put, a Federal Reserve bank can issue \$2½ in notes for every dollar of reserve money which it possesses. As regards its deposits, it is required to keep under existing law a reserve of 35 per cent., but there is an important difference which is very often overlooked between the reserve requirements against notes and the reserve requirements against deposits under Federal Reserve banking practice. In the legislation on this particular subject, if you study it, you will find that the Federal Reserve bank must keep 40 per cent. in gold against its notes, whereas against its deposits, it is required to keep 35 per cent. "in gold or lawful money." I abstain from wearying you with the subject, what is or what is not the complete legal definition of lawful money in the United States, but lawful money in the United States certainly comprehends more than gold. It includes, for instance, the greenbacks issued by the United States Government, which are full legal tender, but which are not even to the present day fully covered by gold. It includes those curious specimens of paper money which are known as silver certificates. In other words, "lawful money" in the United States is not co-extensive in its implication with gold. The usual interpretation of the situation, that the Federal Reserve system holds a gold reserve against its notes and its deposits very largely in excess of the minimum requirements under the Act of 1913, is not due to the fact that deposits *must* be protected by gold as notes have to be protected by gold, but is simply due to the accidents of history. It is due to the fact that for four or five years after the war there was constant inflation in Europe, and it was, therefore, possible for the central bank of the United States to accumulate a gold reserve so vastly in excess of its current requirements that it could protect both the whole of its deposits and the whole of its notes, not by lawful money and gold, but by gold alone. In any case you will notice that Federal Reserve banks can issue something like \$3 in book credit for every dollar's worth of lawful money or gold they possess as regards deposits, and they can issue \$2½ of bank credit in the shape of notes for every

dollar's worth of gold which they possess. In practice, throughout the whole of the period since the end of the war-strain, the Federal Reserve system has held a gold reserve very much in excess of the minimum requirements. In 1920 and 1921 there came a time when it looked as if the reserve system would have to work down to the very minimum requirements permitted by the law, especially in the great period of pressure which ended the boom of 1920. In those circumstances, that is to say, when the reserve banks reach the legal minimum, the Federal Reserve Board has a right, under Section 11 of the Act, to suspend all and any of the reserve requirements imposed under the Federal Reserve Act, but in the case of Federal Reserve notes when the reserve requirements are suspended the Federal Reserve banks have to pay to the Federal Reserve Board a deficiency tax on the extent to which the actual reserve ratio falls below the 40 per cent. figure.

In the period of great expansion of credit at the end of the war, although the Federal Reserve system never broke down in the sense that the minimum reserve ratio laid down under the Act had to be suspended, that suspension was only avoided by the Federal Reserve Board insisting, for the first time in the history of the Federal Reserve system, upon those banks with rather more than the minimum reserve requirements rediscounting for those banks which were absolutely on the margin: in other words, inter-district rediscounting between Federal Reserve banks prevented the application of that particular section of the law by which the minimum reserve requirement of 35 per cent. or 40 per cent. can actually be suspended.

There is one other point to which I should like to draw attention. In the course of the history of the Federal Reserve Act the expansive part of the system, its possibility of expanding credit, has been very considerably increased, because, under the original Act of 1913, a Federal Reserve bank could not obtain notes except against the deposit with the Federal Reserve Agent of 100 per cent. of commercial collateral. In addition to this 100 per cent. of commercial collateral it had to keep a 40 per cent. gold reserve against its notes in circulation, so that, in fact, you will notice, the ordinary Federal Reserve note down to September, 1917, was collateralised or backed by 140 per cent. of cover. In 1917, largely in view of the fact that the United States had just entered upon a great war with unknown requirements with regard to credit expansion, this particular requirement of the Act was mitigated to the extent that after 1917 the Federal Reserve note had only got to be protected by a minimum gold holding of 40 per cent., leaving the remaining 60 per cent. to be covered by commercial assets. That meant that the expansive powers of the Federal Reserve banks were very considerably increased.

Now I come to my second point—What are the instrumentalities through which or through whom policy is expressed? That is very largely, to my mind, a question of what happens to be the balance of power inside the Federal Reserve system at a particular moment of time. The Federal Reserve system is, after all, a body of individuals, 12 banks, which means 108 Directors, and which means in addition to the 108 Directors, 12 Governors. That is 120 persons to begin with. It also means the Federal Reserve Board, on which the American Treasury is directly represented, with six appointed members. So that you have a body, let us say, of something like 130 individuals whose views upon the credit situation you have to examine. I, therefore, say that Federal Reserve policy is, in the first instance, an expression of the balance of power within the Federal Reserve system itself, just as, if I may venture to use a political illustration, the policy of any Government at any particular moment of time is, in the first instance, an expression of the balance of power inside the particular Cabinet which you are considering, and then of the balance of power inside the particular Party of which that Cabinet is the acting head. You cannot say how the balance of power inside a Cabinet, and a Party, will develop from time to time, nor can you say how the balance of power inside a system as complicated as the Federal Reserve system naturally is will develop from time to time; that is to say, there are certain intangible personal elements involved in the question, who determines Federal Reserve policy, upon which no scientific law whatever can be laid down. There can be no doubt, speaking frankly, that during the lifetime of the late Mr. Benjamin Strong the Federal Reserve policy was in many respects an expression of the views held by that very striking and very remarkable individual; and death having removed Mr. Strong, it is exceedingly difficult for the outsider to say who happens to be the dominating personality inside the Federal Reserve system at the present moment. In other words, the balance of power may have changed very considerably in the last few years. But it is quite clear at any rate that there are present in this particular problem certain legal, as well as certain conventional instrumentalities. Federal Reserve policy is, in the first instance, the expression of the Boards of Directors of the 12 Federal Reserve banks. That is clear. It is, in the second place, an expression of the views of the members of the Federal Reserve Board; and when one is contrasting the relative power of the Federal Reserve Board and the Boards of Directors of the Federal Reserve banks, I think one is bound to say that in recent months the Federal Reserve Board has been gaining in power relatively to the Boards of the particular Federal Reserve banks; at least that happens to be my own personal impression of the situation. My own personal

impression of the situation is derived from two circumstances. In the first place, as I pointed out last week, the Open Market Committee of the Federal Reserve system, which carries out extremely important functions from the standpoint of Federal Reserve policy, has now been definitely subordinated to the Federal Reserve Board. I judge of the increase in the power of the Federal Reserve Board from a second circumstance almost as important as the one which I have mentioned, and it is this. You will find, if you look at the Federal Reserve Act, that Section 14 (*d*) (I am sorry to have to be legalistic for a moment), which deals with the establishment of Federal Reserve discount rates, confers power upon the Federal Reserve Board to "review and determine" discount rates charged by the Federal Reserve banks. I am no lawyer. The question which has been agitating the minds of a few individuals in the United States—you cannot expect the general public to take any interest in these matters—is this: What precisely did the Federal Reserve Act mean when it gave to the Federal Reserve Board power to review and determine the discount rates charged by the various Federal Reserve banks? A celebrated incident has taken place, namely, the relations between the Federal Reserve Board at Washington and the Directors of the Federal Reserve bank at Chicago, because the Federal Reserve bank at Chicago has been obliged—has been forced, if you like, to use perfectly blunt language—to reduce its discount rate against its own opinion at the request or command of the Federal Reserve Board, because the Federal Reserve Board took the view that when the Federal Reserve Act said it had the power to review and determine rates, that did not merely mean that after a particular Federal Reserve bank had decided what the rate ought to be, it then submitted that rate to the approval of the Federal Reserve Board. The Federal Reserve Board took the view that the word "determine" in the original Act was extremely indeterminate, but that it included the right to insist upon a particular rate being adopted as well as the right to review a particular rate after it had been decided upon. If you say to a body of eminent gentlemen at Washington, "You have the right to tell a particular Board of Directors of a particular reserve bank, 'You ought to get your rate down'," and to insist upon that rate being brought down, that obviously marks, as it seems to me, a transition of power from the Board of Directors of the reserve bank to the Board at Washington. Whether this will continue, what the constitutional practice built up upon this particular incident is going to be, I know no more than the members of the Federal Reserve system itself, but it appears that in 1919 the Federal Reserve Board took the opinion of the Attorney-General of the United States as to what precisely the implication of the phrase "review

“and determine discount rates” was, and the Attorney-General of the United States, acting perhaps on the general principle that more power to a semi-Government Department is a good thing, took the view that to review and determine rates gave you initiatory as well as vetoing powers. Therefore, to my mind, in the present situation of affairs in the United States inside the Federal Reserve system, the Board is more important than it was, say, three or four or five years ago. But I warn you that that is only a personal opinion of mine, and I have never been an official of the Federal Reserve system.

In addition to these various statutory bodies, there have grown up in recent years inside the Federal Reserve system various non-statutory bodies, just as inside the British constitution there has grown up the perfectly non-statutory body known as the Cabinet. I have already mentioned one of these non-statutory bodies, namely, the Open Market Committee of the Federal Reserve system. There are others. There is the so-called bi-annual conference of the Governors of the Federal Reserve banks. The Governor of a Federal Reserve bank is not, allow me to point out perfectly emphatically, in the same position as the Governor of the Bank of England. In England the Governor of the central bank is the Chairman of the Board of Directors of our central bank. In the United States the Governor of the Federal Reserve Bank is not the head of the bank at all, who is called the Chairman of the Board of Directors, and who otherwise acts as the Federal Reserve Agent, but the Governor is the head of the executive officers of the bank and he, therefore, occupies the same position as, let us say, the Comptroller of the Bank of England does, or the senior general manager of an English Joint Stock Bank. The Governors are in the habit of meeting together at least twice a year at Washington and conferring with the Federal Reserve Board. The Chairmen of the twelve banks, who are also the servants of the Board, and who carry out certain important functions on behalf of the Board inside the various banks, also meet at least once a year at Washington and also confer with the Federal Reserve Board, and I believe that one of the Governors' meetings coincides with one of the Federal Reserve Agents' meetings, so that you have a sort of parliament of leaders of the Federal Reserve system, and it is obvious that when you have a large body like that, all sorts of personal elements, courage, clear-sightedness and ability to speak, and so on, may determine who shall wag the dog's tail at a particular moment of time. Therefore, I say you have all sorts of elements of power inside the Federal Reserve system whose relative position may change from time to time.

There is one other body which I have not yet mentioned, which, I think, has been rather a disappointment to everybody concerned

in the framing and the operation of the Federal Reserve system, and that is the body known as the Federal Advisory Council. It is a body of twelve persons chosen by the Directors of the twelve Federal Reserve banks, one for each Federal Reserve district, which consists of outside experts who are called upon to give their views to the Federal Reserve Board if required. They have occasionally expressed views quite contrary, I suppose, to what the Federal Reserve Board wanted, but I believe that the Federal Advisory Council has not played a very predominant part or exercised a very precise influence in the shaping of Federal Reserve policy. It is perhaps always the case that, when you have a large body of permanent or quasi permanent officials assisted or advised by a body of outside experts who have no official position, it is the outside experts whose views tend to be rejected in the long run.

Now, having said what I have about the instrumentalities of Federal Reserve policy, let me turn to what is, after all, the more important aspect of this question, the mechanics of Federal Reserve policy, the guides to Federal Reserve policy, and a word about Federal Reserve policy itself. If you look at each monthly issue of the "Federal Reserve Bulletin," you will find an extremely interesting table (though it is a rather misleading table, as I sometimes think), which compares with one another certain elements in the technical situation impinging upon the volume of outstanding Federal Reserve credit. They are factors which the Federal Reserve Board, or rather the Division of Research and Statistics of the Federal Reserve Board, divides into factors tending to make outstanding Federal Reserve credit go up, and factors which tend to make outstanding Federal Reserve credit go down.

The factors which tend to make Federal Reserve credit go down are two in number, namely, alterations in the gold stock of the United States, and alterations in the outstanding volume of United States Treasury currency. An increase in the volume of gold, freely disposable gold, in the United States, tends to reduce the demand for reserve bank credit. Please notice that it does not necessarily follow that reserve bank credit will be reduced, but when American banks are importing gold freely from Europe and elsewhere it enables them to build up larger balances at the Federal Reserve banks without having to borrow from the Federal Reserve banks; or, alternatively, it allows them to pay off indebtedness to the reserve banks and still keep a sufficient volume of reserve bank balances which they have to keep to maintain the legal reserve ratio against their deposits, on the lines I have already explained in a previous lecture. Consequently, changes in the gold situation increasing the United States gold supply reduce the need for reserve bank credit. Similarly, if the United States Treasury, which is, after all, still a monetary authority on a very large scale, increases

the volume of its currency in circulation, that reduces the necessity for the member bank to have to get currency from a reserve bank, and as member banks, when they draw currency from a reserve bank at the seasonal peaks of currency demand, generally borrow in order to obtain this currency, again that is a factor tending to reduce Federal Reserve credit outstanding.

What are the factors, on the other hand, which tend to make Federal Reserve credit increase? They are divided by the "Federal Reserve Bulletin" into four main groups. The most important quantitatively is money in circulation. An increase in the quantity of money in circulation tends to increase the volume of reserve bank credit outstanding, and tends to increase it for a perfectly simple reason which I have already insisted upon *ad nauseam* in a previous lecture. The reason is this: member banks of the Federal Reserve system always keep the minimum balance required at the reserve bank against their own obligations to their customers. Consequently, whenever the Christmas trade causes a rise in the volume of hand to hand currency required by the public, or whenever the harvest or spring sowing requires an increase in the volume of hand to hand currency in the hands of farmers and farm labourers, the member banks have to borrow from the Federal Reserve bank for the time being in order to be able to obtain the notes which their customers want. It is, therefore, clear that in those circumstances an increase in the volume of currency in circulation tends to increase the volume of member bank borrowings.

The second element in its order of quantitative importance is the volume of member bank reserve balances which have to be kept at the reserve bank. This is the consequence of the fact that every member bank has to keep a ratio of 7, 10 or 13 per cent. in the shape of reserve bank balances against its demand deposits, and 3 per cent. against its time deposits: consequently, whenever there is an increase in the volume of credit granted by American commercial member banks to their customers there is either an increased demand for currency, or there is an increased demand for member bank balances at the reserve banks because—I will not repeat the old story—in the modern world, additional loans by banks to their customers usually result in a fairly proportionate increase in the deposits of the banking system as a whole, and if that is so there must be an increase under American banking practice in the volume of reserve bank balances maintained against this increased volume of deposits.

The last two items we need not worry very much about. I mention them in order to be technically complete. The first is the increase or decrease in the volume of non-member bank balances maintained at reserve banks. A certain volume of deposit balances other than those representing member-bank

reserves are maintained at the reserve bank, the first and most important item being United States Government deposits. Just as an English Joint Stock bank finds in the first three months of the year, as a rule, that money is being transferred from itself to the Bank of England on account of income tax and other payments, so when the Treasury of the United States decides to transfer money from some middle western city to Washington, to Chicago, or New York, it has to withdraw money from the other bank to a reserve bank, which increases the volume of non-member bank deposits at the reserve bank. Surely that is clear. Similarly, when some foreign central bank which formerly kept an account with the Guaranty Trust Company, or the National City Bank of New York, both banks being members of the reserve system, decides in future to keep an account with the Federal Reserve Bank of New York, this means a transference of deposits to the reserve bank and, therefore, increases the demand for Federal Reserve credit, other things being equal, because the banks previously holding these deposits find their reserve accounts at the New York Bank decreased in consequence of the transfer, just as the open market in London finds it has to borrow more from the Bank of England in the first three months of the year than in any other month of the year, because the Joint Stock Banks are temporarily losing funds to the Bank of England.

The other element is technically described as "unexpended capital items." Since the member banks of the Federal Reserve system have to provide the capital of the Federal Reserve bank, an increase in the total membership of the Federal Reserve system, or an increase in Federal Reserve bank capitalisation for the time being, drags money from the member banks to the reserve banks, and they pay this money by drawing on their balances at the Federal Reserve banks. Consequently, again, until the Federal Reserve banks have spent their increased capital sums they find that the member banks have to borrow rather more than they did before. Therefore, you have certain elements which, if they increase, decrease the demand for reserve bank credit, and certain elements which, if they increase, decrease the demand for reserve bank credit. How has the thing worked out over the last few years? It has worked out in this way. I am now going to give you the figures relating to the average position in 1928, and will compare them with the position in the month of September, 1929, thus covering the most interesting period in the recent history of the Federal Reserve system. During that period of time there has been a decrease in the outstanding volume of Federal Reserve credit of something like 77 million dollars. Those 77 million dollars constitute the balancing item in a whole series of transactions which in detail are as follows. First of all

a group of factors reducing the requirements for reserve bank credit. During these nine months the free gold stock of the United States has risen by 161 million dollars, and at the same time the volume of reserve bank balances, the member bank reserve bank balances, the balances which members are required to keep at the local reserve banks, has fallen by 20 millions. Therefore, other things being equal, an increase in the gold stock and a decrease in the requirements for reserve bank balances has reduced the necessity for reserve bank credit altogether by 181 million dollars. That is clear. At the same time there have been certain elements in the situation requiring an increase in the volume of reserve bank credit. The volume of Treasury currency outstanding has fallen by 16 millions: the volume of money in circulation has increased by 28 millions: the non-member bank balances and unexpended items on capital account have increased by 60 millions. So that, altogether, there have been forces making for a possible reduction in reserve bank credit to the extent of 181 million dollars, but there have been forces making for a possible expansion of reserve bank credit to the extent of 104 million dollars. The difference between 181 million and 104 million is 77 million dollars, and that is the extent to which outstanding reserve bank credit has fallen off.

Now I give you these figures because I want to warn you, if I may, against the danger which a study of balance sheets invariably induces in everybody, the danger of thinking, that because two sides of a balance sheet balance, therefore no possible responsibility attaches to anybody in particular. Of course, there is the element of reserve policy still involved in this situation, because it is still open to you to ask this: If Federal Reserve policy had been different would not the balance sheet have balanced with a different amount on both sides? You do not prove that the Federal Reserve system is absolutely blameless for everything that is done merely because you show that when everything is taken into account the volume of reserve bank credit has merely fallen by an amount sufficient to off-set certain other factors in the situation. You have to ask yourself whether, for instance, if Federal Reserve policy had been different from what it actually has been, the gold stock in the United States would not have been very different from what it was? If, for instance, the Federal Reserve system had kept its discount rate in the spring and summer of this year, as so many people wanted it to do, in the neighbourhood of a comfortable $3\frac{1}{2}$ to 4 per cent., would the gold stock of the United States have risen as it actually has risen by 160 million dollars in the first nine months of the year, and if the gold stock of the United States had not risen by 160 million dollars, would the money in circulation have altered as it actually did? You do not prove anything by

merely analysing what the mechanical factors forcing a bank in a particular direction are, until you have answered the subsequent question: Could the bank have altered the quantitative relationship of those factors to one another? If you cannot see that a bank is independent of the mechanical factors involved, you fall back into the awful fatalism which always ends by people saying that all is for the best in the best of all banking worlds. You seemingly cannot alter anything, because the Federal Reserve system has merely reduced the volume of outstanding credit by an amount sufficient to off-set certain other elements, and people forget to ask: Could not these other elements have been different from what they actually were?

That brings me to my last point: What are the objectives of Federal Reserve policy? In the first place, let me again warn you that you cannot describe the policy of the Federal Reserve system, or the policy of the Bank of England for that matter, or of any other central bank, in some simple slogan dear to the heart of city journalists. Fancy slogans have been invented in recent years to describe the policy of the Bank of England. I am not going into that question, not knowing whether those slogans describe the situation accurately or inaccurately. Slogans have also been invented to describe Federal Reserve policy. The simplest is that the policy of the Federal Reserve system since the end of the war has consisted in sterilising gold imports from Europe; or you find that some people say that the policy of the Federal Reserve system in the last few years has been to stabilise the price level in the United States: or you find even Federal Reserve officials themselves relying on certain words in the Federal Reserve Act and trying to describe the policy of the Federal Reserve system as consisting primarily in an attempt to accommodate commerce and business in the United States. The only way in which you can really understand Federal Reserve policy is to do what Dr. Stewart in the passage which I quoted at the beginning of this lecture suggested you ought to do, namely, study each situation as it arises and try and draw inferences from the action of the Federal Reserve system at that particular moment of time. That I have not time to do.

Let me suggest to you, however, that the following six elements at least are contained in recent Federal Reserve policy, and by the words "recent Federal Reserve policy" I mean Federal Reserve policy since the year of grace, 1924. Why do I select that date? I select that date, because, by 1924, the Federal Reserve system became aware consciously, and for the first time, of the enormous importance, not only of its discount rate policy, but of its own open market operations.

What are these six elements, as I suggest, of Federal Reserve

policy? The first is the business situation. Both in 1924 and in 1927, when the business situation in the United States showed signs of a recession, the Federal Reserve system deliberately adopted the policy of cheap money, and confesses as much in its own reports, a thing which most central banks would be extremely unwilling to do. Here, for instance, is the statement, if I may quote it, from the Federal Reserve Report of 1928: "In the autumn of 1927 the Federal Reserve system, in view of business recession in this country and a money stringency abroad, adopted a policy directed towards easier money. This policy was a factor during the latter part of 1927 in bringing about a reversal of the gold movement, which had been towards the United States for several years, and a substantial outflow of gold to other markets. The effect of this outflow on the domestic money market was at first fully off-set by the reserve banks by open market purchases of securities." In any case, in 1927 and in 1924, the business situation showing signs of a recession, the Federal Reserve system undoubtedly adopted a policy of cheap money both by reduction of discount rates and open market policy, intending to relieve the situation. The second element in Federal Reserve policy, one which has played a considerable rôle in recent months, but has played a rôle before, is the presence or absence of speculative factors in the situation. For instance, in 1924, you will find the Federal Reserve banks saying, "During the period when reductions in discount rates decrease the cost of reserve bank credit to member banks, security purchases, by facilitating the repayment of borrowings by member banks, were an influence in reducing the amount of their indebtedness to the reserve banks. At the time when the open market purchases were made there was a recession in industrial activity, the attitude of the business community was hesitant, and there was no evidence of a growth of speculation." One can find other passages like that. The second element in Federal Reserve policy is therefore the question whether or not at a particular moment of time there are indications of a speculative spirit abroad. The third element in the situation, a subordinate element but still an element, is the international situation, in so far as that international situation is likely to react unfavourably upon American business. In 1927, when the Federal Reserve system pursued a policy deliberately of cheap money, they did it partly because they were afraid that the pressure of high rates of discount in Europe would interfere with the sale of American agricultural products in Europe. Their own business situation was depressed simultaneously, and, therefore, the cheap money policy of the middle of 1927, which has been so bitterly attacked by the critics of the Federal Reserve system in the United States, was partly intended to relieve Europe, but mainly intended to

relieve themselves, because to relieve Europe would have relieved the domestic agricultural and business situation as well.

The fourth element in Federal Reserve policy is the having in hand of a weapon for future use. In 1924, when the Federal Reserve system by a generous open market policy accumulated a great store of Government and other securities, they expressly said that, "by these purchases the reserve banks placed themselves in a position through the subsequent sale of securities in case it should become desirable, to cause member banks to discount and to bring a larger part of the outstanding reserve bank credit under the influence of the discount rate." In other words, at times the reserve banks deliberately accumulate securities through open market purchases in order that, later on, if they think it desirable, they can force the member banks into the reserve bank, and, therefore, make the reserve discount rate effective, even though, at first these purchases diminish the effectiveness of the ruling rate.

The fifth and sixth elements in Federal Reserve policy are those which have sprung into prominence particularly in the last 12 months, and by the last 12 months I mean from about the middle of 1928 to the middle of 1929. The first is a somewhat dubious one, that is to say, I am not quite clear what the interpretation of the situation is; it is the total amount of reserve bank credit involved. There is beginning to be a suggestion that whenever the total volume of reserve bank credit outstanding rises above 1,000 million dollars, then it becomes time for the Federal Reserve system to take very vigorous action.

The sixth point is the contingent danger to the reserve bank system of the uses to which Federal Reserve funds may be put by commercial banks; that is to say, the Federal Reserve system is beginning to be somewhat alarmed by the possibility that it cannot itself directly control the *uses* to which member banks put money borrowed from the reserve banks, and by the reactions of the loan policy of member banks on the gold situation. Let me read to you two short passages from the Report of 1928, which I think sums up what I mean.

(1) "Since the reserve banks hold all the reserves of member banks, and through credit policy can influence the rate of growth of these reserves, the Federal Reserve system has a responsibility, within the limit of its powers, for the *character* of growth in the total volume of member bank credit. Increased loans and investments of member banks, regardless of the purpose for which the loan or investment is made, result in the creation of additional deposits. A growth in deposits, resulting from an increase in any class of loan or investment, in turn increases the reserve requirements of member banks, and consequently their demand for

“ reserve bank credit. Every class of loan or investment, there-
 “ fore, rests in the final analysis upon reserve bank credit, which
 “ is the base of the entire credit structure, and excessive or too
 “ rapid growth in any field of credit, whether it be commerce,
 “ industry, agriculture, or the trading in securities, is a matter
 “ of concern to the Federal Reserve system. Too rapid expansion
 “ of bank credit in any field may result in serious financial dis-
 “ organisation, and it inevitably leads to increased demand for
 “ reserve bank funds. Because the system has a broad responsibility
 “ for the general soundness of credit conditions, and because a
 “ growth of bank credit for any purpose ultimately leads to a
 “ demand for reserve bank credit, it is its duty to use its influence
 “ against undue credit expansion *in any direction.*”

(2) “ It is impossible to foresee all the effects of a credit policy
 “ and difficult to appraise them even after they have developed.
 “ It is certain, however, that the Federal Reserve system must steer
 “ its course with reference to broader developments and longer
 “ time objectives than day-to-day or month-to-month changes in
 “ any particular line of credit. Principal among such objectives
 “ are the continuous provision of credit at reasonable cost in
 “ amounts adequate for the requirements of trade and industry
 “ and the safeguarding of our gold reserves, which are held in
 “ trust to meet future needs, against unduly rapid absorption
 “ through expansion of credit.”

In other words, the Federal Reserve banks argue that as they cannot directly control the use which is being made by member banks of the funds which they borrow from reserve banks, they have to consider long-run objectives, and, for the first time, I think, for many years—at any rate, as far as I remember the Federal Reserve literature since 1923, the Federal Reserve banks are beginning to put among the long-run objectives of Federal Reserve policy the safeguarding of the gold reserves of the United States. That is a very significant and very important alteration in tone, because, until recently, the official attitude, I think I may say, of the Federal Reserve system was that the gold reserve of the United States was so large that Federal Reserve policy needed to be guided by other tests than that of the size of the gold reserve. What are those other tests? The answer is that the other tests are furnished by statistical surveys of trade, productivity and the like, by a volume of statistical and economic information which is, and ought to be, I think, the admiration of all theoretical students of banking affairs. The Federal Reserve system has at its command a volume of information which I certainly think no other central bank at the present time possesses. Whether it always uses that information in the way in which any particular

economist surveying the operations of the system thinks right, is entirely a different matter. Nevertheless, it is true to say that if ever there was a central bank which attempted to guide its policy by scientific tests of what that policy ought to be, that system is the Federal Reserve system of the United States.