

Federal Reserve Bank of New York

Quarterly Review **Special Issue**

75th Anniversary Issue

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75th Anniversary

Note on the speeches reprinted in this issue—For the convenience of the reader some editorial additions have been made titles have been supplied for the speeches of Benjamin Strong and subheadings have been inserted in all speeches Punctuation and capitalization have been modernized in the speeches of Benjamin Strong and George Harrison

To Our Readers:

In honor of the 75th anniversary of the Federal Reserve Bank of New York, this special issue of the *Quarterly Review* reprints a selection of speeches by the seven chief executive officers of the Bank. Generally, we have chosen one speech for each chief executive. In the case of our first Governor, Benjamin Strong, we have included a speech dating from the middle of his term as well as selections from a 1915 talk describing the earliest days of the Bank.

Taken as a whole, the speeches contained in this volume portray a noteworthy—but perhaps not surprising—consistency of philosophy among the Bank's chief executive officers. One powerful reason for that consistency is to be found in the writings of Benjamin Strong, whose lasting imprint on the Federal Reserve Bank of New York is readily apparent. Strong's 1915 description of the early days at the Federal Reserve is fascinating in both pragmatic and philosophical terms; his mastery of the details of both commercial and central banking is unmistakable.

From the very beginning, Strong saw credit policy as "the heart of the system upon which . . . every other part depends." In 1922, he captured in a single paragraph a description of the Federal Reserve which, in its simplicity and its insight, probably spells out the essence of the Federal Reserve as well as it has ever been said in a few words. He wrote,

The Federal Reserve System has always impressed me as being essentially a social institution. It is not a supergovernment, it is simply the creature of Congress, brought into being in response to a public demand. It was not created only to serve the banker, the farmer, the manufacturer, the merchant, or the Treasury of the United States. It was brought into being to serve them all: Its guiding influence is not profit. Practically all its receipts over expenses go to the government. For some the service it performs is direct, for others it is indirect, but is not less definite nor any less important. It needs and asks that it be given the benefit of intelligent study and enlightened criticism. Its future depends upon its own good behavior and upon its success in winning and holding the confidence of the public.

In the case of George Harrison, the second chief executive officer of the Bank, we were able to locate only one full-length address over his term of office. We have included in the publication a letter written by Harrison which explains why he chose to avoid making public statements.

Harrison's 1936 speech is of note not just because it apparently is the only formal speech he delivered during the 12 years of his presidency but also because of the setting in which it was written. It is very apparent that the depths of the recession, the banking crisis of March 1933, and the gathering storm of World War II were all prominent in Harrison's thinking. When he speaks of "short-term funds washing about money markets of the world in defiance of all the ordinary rules except the rule of fear," one cannot help but conjure up a sense of how difficult that period must have been.

Yet, despite the turmoil of the day, Harrison's speech is most memorable for its insights on domestic and international monetary policy. He makes the case that economic nationalism can only result in lower, not higher, standards of living. He obviously is sensitive to the limitations of monetary policy, including his belief that "no central banking system can be made a substitute for a sound commercial banking system." He is skeptical about "rules" in monetary policy but his insight and his pragmatism are perhaps most evident in his comments about alternative exchange rate regimes. Specifically, he writes,

Now, the increasing rigidity which we have witnessed has been cited by some as proof that an international monetary standard is no longer workable. That seems to me the shallow and short-sighted conclusion. It ignores the great dangers and hazards of fluctuating exchanges as well as the competition in defensive measures to which they lead. Financial armaments, like military armaments, are expensive and unsatisfactory. Moreover, there is implied in this whole view the fallacious notion that nothing more is involved than a mere act of choice; that we are entirely free to choose between domestic monetary stability and international monetary stability. It would be nearer the truth, in my judgment,

to say that neither is possible without the other. Unless each country is literally to build a wall around itself, our economic problem will always be one of interplay between internal and external forces, and no amount of choosing between fixed or flexible exchanges will get around that fact.

Allan Sproul's "Reflections of a Central Banker" was written only six months before he retired as the third chief executive of the Federal Reserve Bank of New York. Sproul's remarks, coming after 14 years of service as the Bank's president, are noteworthy in several respects. One is his spirited defense of the structure of the Federal Reserve, with particular emphasis on the role of the Federal Open Market Committee, the regional character of the Federal Reserve, and the role of the Reserve Bank Presidents as members of the Federal Open Market Committee. Sproul notes with an obvious sense of concern,

I have spoken of this matter of organization at some length because I think it is vital to the preservation of a Federal Reserve System which retains regional vigor in a national setting, and because attempts to destroy the Federal Open Market Committee, as presently constituted, have been made from time to time. In fact, a bill has been resting in a Congressional committee for the past year which would abolish the Federal Open Market Committee and transfer its functions to an enlarged Board of Governors of the Federal Reserve System. That way lies a revolution in the organization of our credit control machinery. I believe that this is a question which goes well beyond the mere mechanics of organization and which needs and deserves your closest scrutiny as citizens, as well as economists and men of finance.

In the remainder of the speech Sproul presents a masterful portrait of the art of central banking, including the great difficulty of winning support for policies that are designed to prevent an outbreak of inflation, in contrast to policies aimed at correcting inflation once it has already occurred. He says,

When we mention inflation as a reason for trying to restrain a boom which shows signs of temporarily exhausting physical capacity to increase the supply of goods and services, . . . we are apt to be charged with crying wolf when there is no wolf, to be denounced as apostles of deflation. And if actual inflation does not develop, perhaps because we have done our job of helping to curb its development, the accusation against us seems to gain validity,

Sproul also was skeptical about monetary rules. On this, he writes, "I do not believe that we can now devise a 'norm' or an equation which will relieve us in any substantial and consistent way of the necessity of exercising human judgment in discharging our responsibility."

When Al Hayes assumed office as the Bank's fourth chief executive officer in 1956, his three predecessors, Strong, Harrison, and Sproul, had, over the relatively short period of about 40 years, created a strong institutional tradition which is to be seen in the writings of the Bank's next three Presidents—Hayes, Volcker, and Solomon. To be sure, each was unique and distinctive in his own right but the influence on them of the first years of the Bank's history is quite evident.

Hayes' late 1974 remarks on the international monetary system should be looked at in the perspective of the time and the man. The setting, of course, was shortly after the collapse of the Bretton Woods system and the first oil shock. The man, like his predecessors, was conservative. He did not resist change but he strongly believed that change—especially major change—had to be approached with care and executed with precision.

In this setting, a number of his comments would prove to be prophetic—for example, his call for "greater emphasis on effective measures to conserve fuel, however unpopular they might be," or even more to the point, his caution that "'recycling' . . . is a misnomer—or worse" in that "it tends to conceal the basic question of who shall assume the credit risk in lending to the countries beset with economic difficulties."

Perhaps the most important parts of the Hayes speech, however, are the sections "Reflections on Bretton Woods" and "Prospects for the International Monetary System." In looking to the future, he said: "it would not prove possible to agree in advance to a complete new system. Rather, it would be necessary to rebuild gradually on an ad hoc, experimental basis, with various blocks of the new system being put in place as they proved their worth." Finally, his closing strong plea for international economic cooperation speaks for itself.

For those of us who know him well, Paul Volcker's "The Contributions and Limitations of 'Monetary' Analysis" is vintage Volcker. He begins by noting that "sorting out what is true and valid from what is fashionable is never easy." And he ends on this potent note: "My theme today is simple. As we look back over the evolution of thinking about monetary policy and macroeconomic policy generally over the postwar years, we can see the dangers of overly simple and overly confident views of the way the economic world works. Eventually, simple doctrine comes up against complex and

harsh reality."

He is plainly skeptical about monetary rules but recognizes that there is a useful element of policy discipline in what he calls "practical monetarism." But even there the emphasis is probably more on the side of "practical" than on the side of "monetarism," for he writes: "I know of no purely mechanical procedure to avoid these risks—to ensure just the right degree of responsiveness to deviations from target. Whether and how much to respond will, I think, always be a difficult matter of judgment and won't be helped much by choice of tactical approach."

Looked at in retrospect, however, the most important part of the Volcker speech is near the end when he worries aloud about an apparent increased tolerance for inflation in the United States. In this context, he says,

Now, I recognize that it is possible to conceptualize about fully anticipated inflation being equivalent in its real effects to confidence in price stability. But I also question whether our institutions or individuals are in fact fully adjusted, or really can be expected to adjust, to the current rate of price increases or to any sizable rate of inflation. In any case, such an adjustment, once initially made, would not help us to deal with those forces that upset price equilibrium in the past. Indeed I suspect the job of dealing with these forces would be much more difficult, for the difference between a goal of, say, living with 6 percent or a goal of evolving toward stability seems to me profound from a psychological point of view. Willingness to settle for just so much inflation, but no more, would simply lack creditability with the public at large, or indeed, with policy makers themselves. Resistance to increases in the name of short-term advantages could only be weakened, and we would be off again. And I think we have learned enough to see that, in those circumstances, even our employment goals will fall by the wayside.

Tony Solomon's 1984 remarks on what he calls "Unresolved Issues in Monetary Policy" clearly reinforce many of the messages of the five preceding speeches. He warns of serious fiscal imbalances in the United States; he describes efforts to pump up the money supply in those fiscal circumstances as being "nothing short of calamitous"; and he sounds what proved to be an early warning on the effects of financial deregulation and innovation on the monetary policy process. Then, like his predecessors, he says that "we have to pay more attention to the international implications of domestic monetary policy."

Finally, he warns of the deceptions to be found in simple rules of economic behavior and monetary policy. He says,

The proponents of monetary rules—whether of strict monetary targeting or some mechanical response to changes in the price of gold or some commodity price index—seem to think our problems with inflation are mainly technical. They are not. They are rooted in major structural features of our modern world, both economic and political.

Individually and collectively, these remarks by the Bank's past chief executive officers represent an important insight into the evolution of thinking about monetary policy and monetary matters more generally. Yet, despite that evolution and despite the vastly different circumstances in which each of the speeches was delivered, the commonality of concerns, the blend of vision and pragmatism, and the depth of conviction about the need for financial discipline are what truly stand out. I hope you will enjoy reading these papers as much as I have.

E. Gerald Corrigan
May 18, 1989

Benjamin Strong
Governor, October 1914 to October 1928

The Federal Reserve was established on short notice immediately after the start of World War I. In this, his earliest address as Governor of the Federal Reserve Bank of New York, Strong describes the activities of the Bank in its first seven months. He explains the steps taken to ensure that the Federal Reserve would have sufficient resources to meet bank runs and the measures adopted to establish a check clearing system for member banks.

The Formation of the Federal Reserve System by Benjamin Strong

This is the first general convention of the bankers of the State of New York since the establishment of the Federal Reserve System, and, therefore, the first opportunity to address all of the bankers of the state in regard to the work which has been done by the Federal Reserve Bank and in regard to some of the larger aspects of the system. Your president has asked me to refer to our plan for collecting checks and to the new regulation regarding state banks, but I want first to briefly review some of the work that has been accomplished by the Bank since its organization last November.

On October 26, 1914, it was decided by the Secretary of the Treasury that the situation brought about by the war in Europe necessitated the immediate organization of the Reserve Banks, and November 16 was

fixed as the date when they should open for business. On November 2, \$3,321,950 of gold was received from the member banks of this district in payment of the first installment of our capital. On the morning of the 16th of November, an organization, largely temporary, consisting of seven officers and 85 clerks had been assembled, and on that day \$99,611,670 of reserves were transferred to the Bank by the member banks. We had been successful in renting satisfactory offices already equipped with the furniture and fixtures necessary for our accommodation. Our temporary organization has since been gradually converted into a permanent organization, consisting now of five officers and 52 clerks, including stenographers, messengers, watchmen, and porters.

Two additional installments of capital have been received, making the present paid-in capital \$9,961,650, being 50 percent of the statutory amount. Reciprocal accounts have been established with the

Address delivered before the New York State Bankers Association, Saratoga Springs, New York, June 24, 1915.

other 11 Reserve Banks for the purpose of handling interbank transactions, such as collections and investments. Through these accounts, the Federal Reserve Bank of New York has up to this time handled \$426,300,000 of exchange and \$25,000,000 of currency shipped to us to create exchange. Balances have fluctuated widely, the net amount due the New York bank at times exceeding \$20,000,000. On May 19, 1915, for the purpose of facilitating prompt settlement of these balances at minimum cost, there was deposited in Washington by all the Reserve Banks, and placed under the control of the Federal Reserve Board, a fund of gold sufficient to enable them to effect settlements between themselves without transferring any currency and simply by exchange of telegraphic advice. These settlements are at present made weekly, but if a larger volume of transactions makes it necessary, the fund can be increased and the settlement effected daily.

After some months of study by the Federal Reserve Board and the officers of all the Reserve Banks, the Federal Reserve Bank of New York, in common with the other banks, has taken the first step toward the creation of machinery for collecting checks for its member banks within its own district. Plans for establishing a system of bank transfers have been agreed upon by all 12 of the Reserve Banks and will shortly be placed at the disposal of the member banks, to enable them to effect prompt and economical transfers to all parts of the country. This system will be gradually developed and enlarged. Service of this character is made possible largely through the establishment of the Gold Fund in Washington, by means of which balances between the Reserve Banks created as a result of these transfers will also be settled.

In the first seven months of our business the New York Reserve Bank has discounted for its member banks 1,501 notes, amounting to \$8,284,349.70. It has also purchased in the open market 387 acceptances of a total value of \$9,315,158, and it has made 41 investments in short time municipal warrants of a total value of \$11,160,000. In addition to the investments made for its own account, it has purchased \$23,697,508.93 of acceptances and municipal warrants for account of eight of the other Reserve Banks, on their instructions.

From these discounts and investments, the Bank has to date made gross earnings of \$158,710.38, its current expenses have been \$116,948.84, leaving \$41,761.54 of net earnings, which will be applied to organization expenses amounting to \$181,654.36. These are partly made up of the cost of initial purchases of necessary supplies and fixtures, and making changes in our office. \$35,424.18 however, consists of the assessments levied against the banks for its proportion of the

expenses of the Federal Reserve Board and \$98,180.98 represents the actual cost of preparing Federal Reserve notes issued and to be carried in stock. The directors of the Bank have authorized the preparation of a total of \$300,000,000 of notes of various denominations, determined by experience gathered from all sources available as to the demand for currency. This will involve a considerable outlay by the Bank, but the assurance to the member banks that we have on hand at all times not less than \$250,000,000 of currency available against emergencies, well justifies the cost. There is at present on hand over \$183,740,000 of notes and the supply is being increased so as to complete the amount in a few weeks. To this date there has been issued \$34,600,000 in denominations of \$5 to \$100 inclusive, of which amount \$34,420,000 now outstanding are covered by a like amount of gold deposited with the Federal Reserve Agent.

Of course, the ability of the Reserve Banks to increase their gold reserves, beyond the amount of the member banks' deposits, is dependent upon their ability to issue notes against deposits of gold. This process is now in successful operation, the New York bank alone having issued, as stated, \$34,920,000 of notes against a like amount of gold deposited with the Federal Reserve Agent, and all 12 of the Reserve Banks show \$58,291,000 of gold so held.

The New York Clearing House Association has admitted the Bank to limited membership, thereby giving us facilities for clearing checks without imposing liabilities which we are not authorized to assume; and in all matters pertaining to our organization and the development of our business, the clearing house has given us loyal cooperation. The work of the Bank is being carefully departmentalized under the direction of experienced men. Owing to the simplicity of the work to be performed and the machinery for handling it, I am confident that in due time the Bank will be more economically managed than any other bank of its size in the world. Simplified methods of bookkeeping, and permanent statistical records, are being studied and adopted without, however, attempting to burden the organization with unnecessary detail. Credit files have been started to record the condition of our member banks, as well as information gathered in regard to paper offered for discount by those banks which avail of our facilities. In time this record will be one of the Bank's most valuable assets, enabling it to promptly and safely meet unusual demands that may be made upon its members.

This brief review of the past seven months' work must not give the impression that it has been an easy task or accomplished without arduous labor. Everything pertaining to the organization has been new and

untried. It may be said that on October 26 the Bank's equipment consisted of little more than a printed copy of the Federal Reserve Act; whereas, today, it is a fully

equipped bank with an organization perfectly capable of meeting any emergency and is promptly transacting the business entrusted to its care.

Federal Reserve Control of Credit

by Benjamin Strong

In the early days of the Federal Reserve, changes in the discount rate were the principal instrument through which the central bank exercised control over credit conditions. In this address, Strong explains the use of discount rate changes as a means of controlling the volume of credit and influencing interest rate movements. He considers criteria for discount rate changes, concluding that in the absence of gold movements under a reestablished gold standard, policy makers have no option but to look to general economic conditions.

Since the Federal Reserve Banks were established, and, in recent years in increasing quantity, the reports of the System have been so complete and have described the operations in such detail that students of banking require hardly more than the official reports to gain a fairly complete knowledge of the business conducted by the System.

Even those who have not studied this literature understand that the Reserve Banks hold the banking reserves of the country, that they discount paper for their member banks, that they invest in bills or bankers acceptances and in the securities of the United States government, that they issue and redeem the principal currency of the country and distribute the metallic money coined by the mints, that they collect checks and practically all other types of instruments of payment for their members, effect the settlement of the domestic exchanges, and, in their capacity as fiscal agents of the Treasury, borrow all the money required for the Treasury's operations, handle the Government debt, receive on deposit the revenues, and pay checks drawn by the disbursing officers.

Address delivered before students of the Graduate College, Harvard University, Cambridge, Massachusetts, November 28, 1922.

It is important that this business be visualized as to volume as well as character. Bearing in mind that the Federal Reserve Bank of New York does about 40 percent of the business of the whole System, its transactions for the 10 months of this year were briefly as follows: It held an average of \$1,150,000,000 of reserves, practically all gold, discounted \$46,000,000 pieces of paper aggregating \$5,200,000,000 for its members, purchased 81,000 acceptances for itself and for other Reserve Banks and for member banks and foreign banks aggregating \$1,150,000,000, and for account of all Reserve and other banks and of the Government and foreign banks purchased and sold \$2,400,000,000 of Government and other securities, it counted and handled 315,000,000 pieces of paper currency aggregating \$2,000,000,000 and handled a daily average of 26 tons of coin, collected 118,300,000 checks, notes, drafts, coupons, and other negotiable instruments aggregating \$51,000,000,000, and affected payments by telegraph, over the 15,000 miles of telegraph wires which the System now operates, aggregating \$17,600,000,000. Its transactions for the Treasury as the Government's fiscal agent were of too great a volume and variety to express briefly in figures.

These figures are recounted for the purpose of emphasizing the character and extent of the contact of the Reserve System with the credit and currency operations of the country and, consequently, the significance of the functions which the Reserve Banks exercise.

As to the System's policies and the purposes which inspired them, there is now an extensive literature in the shape of critical books, magazine articles, and public addresses. It would be but repetition for me to go over ground so fully discussed by so many competent students and critics.

There is, however, one function of the Reserve System the importance of which cannot be over-

emphasized and which I have determined to discuss tonight because it is, in fact, the heart of the System upon which the operation of every other part depends. I refer to the entirely new element which was superimposed upon our banking System in 1914 by the establishment of the Reserve Banks, which were given the power to influence or to regulate or to control the volume of credit. Every other function exercised by the Reserve Banks sinks into insignificance along side of the far-reaching importance of this major function.

Without regard to the views which you may entertain as to the various theories in regard to the purchasing power of money, or what may be more popularly described as the quantity theory of money, there is hardly anyone who is familiar with these matters who will not agree that no influence upon prices is so great in the long run as is the influence of considerable changes in the quantity of money, by which I mean not only metal coins and paper money, but bank deposits upon which checks may be drawn. The Reserve Act did in fact, whether by conscious design of its authors or not, bring about an almost revolutionary change in three important particulars in bank credit which may in turn have had an important relation to prices. (1) The Act originally reduced the reserve requirements of the national banks, and, subsequently in 1917, reduced them again. The effect of this was to make reserve money more efficient in that it was permitted to sustain a larger volume of loans and deposits than previously had been permitted. (2) By conferring the so-called clearing house functions upon the Reserve Bank, it speeded up the whole System of payments; checks are collected and paid more promptly; the course of currency shipments throughout the country has been greatly shortened and currency passes more promptly to points of redemption; and the countrywide clearing house, known as the Gold Settlement Fund, operated on the basis of daily telegraph settlements, has greatly shortened the length of time required to effect settlement of the entire domestic exchanges of the country. (3) But the most important change, as I have stated, is that conferring the power upon the Reserve Banks to actually permit or influence changes in the volume of money which serves as bank reserves or circulates as currency. My thesis, therefore, is addressed solely to this question of the regulation of the volume of credit and to make clear what a change has taken place because of the granting of this power.

Credit conditions before 1914

Let me refresh your memory as to how credit matters operated prior to 1914: Practically all of the commercial banks and trust companies of the country were subject to various statutory limits as to the minimum amounts

of cash and redeposited reserve which they were required to carry. Except by legislative change in reserve requirements, there was no possibility of increasing the supply of reserve money beyond what arose through gold production or gold imports, neither could the supply of reserve money be contracted unless gold was exported. So it may be generally stated that the total reserves of all the banks was incapable of contraction except by paying it out to the public or exporting it; and equally incapable of expansion unless redeposited by the public or unless gold flowed into the country from abroad or was produced from the mines. Bear in mind I say total and not percentage. This had serious consequences in its relation to that mysterious phenomenon which is now being so carefully investigated and which we call the business (or, as I would prefer to call it, the credit) cycle.

At one extreme of the cycle the reserves of the banks regularly became impaired. With deficient bank reserves we were liable to see rates for "speculative" money advance to 100 percent or even more at times, and the charge for credit to merchants and manufacturers became a severe burden upon production and distribution. In such a situation almost any percussion cap would start an explosion. In 1893-95 deficient revenues of the government and an unfavorable trade balance which resulted in gold exports, coming at a time when there was agitation for a change in our monetary laws, led to great uneasiness. The reserves of the New York Clearing House banks showed shortages from \$1,300,000 to \$16,500,000. Fear developed that the Treasury would not have sufficient gold to meet its obligations and finally the crash came on June 21, 1893, resulting in the New York banks, and banks generally throughout the country, suspending currency payments; very largely suspending cash settlements between themselves for checks sent for collection not only through the local Clearing House but throughout the country. At that time a total of \$41,490,000 Clearing House loan certificates were issued.

Much the same thing happened in 1907, when after a period of deficient banking reserves running from \$1,200,000 to \$54,100,000, the extended condition of a number of New York City banks caused alarm and general suspensions of like character to those of the early 1890s throughout the country. Call money loaned as high as 125 percent; currency went to 4 percent premium; and the domestic exchanges again were frozen.

Then again at the other extreme of the cycle, after a period of liquidation, surplus reserves poured into the money centers. After this same liquidation in the early 1890s the New York Clearing House banks at one time showed surplus reserves of \$111,600,000. And bear in mind that at that time the total required reserves of the

New York Clearing House banks were but 27 percent of what they now are. Money then loaned at less than 1 percent. And the same occurrence was witnessed after the liquidation of 1907 when the surplus reserves of the New York City Clearing House banks rose to \$71,000,000.

While under the conditions first described, every bank was seeking to withdraw loans, under the conditions last described, the banks were forcing money into the market. Money would become almost unloanable and the temptation to the speculator and his kind was extreme. I personally recall making loans on the New York Stock Exchange at $\frac{3}{4}$ of 1 percent.

These extreme credit conditions arose because there was no stretch. When the period of surplus reserves arose, funds poured into the speculative markets. When the period of deficient reserves arrived, all the banks sought to contract their loans to make good their reserves and we witnessed the extremes of speculation and of business embarrassment. There was neither control of the volume of credit, nor moderating influence as to rates of interest. And, finally, there was no control over the movements of gold in and out of the country. I recall the Governor of the Bank of England telling me in 1916 that one of the most menacing influences on their reserves position was the possibility of a gold movement to America or from America as a result of our erratic money market, which no influence that they could exert was capable of stemming; of their regarding our so-called free gold market as one of the worst menaces to the stability of their own credit position.

I have refreshed your memory as to the conditions which prevailed under the old System in order to bring out in contrast the extent to which it differs from present conditions. As things are now, when a period of business expansion arrives, whether it be an annual and seasonal one, or whether it be due to a series of favorable crops at home and bad harvests abroad—in other words whether it be the short cycle of seasons or the long cycle of periods of years—such expansion, whatever its cause, can now be easily financed because of the power of the Federal Reserve System to furnish the required reserve money as needed and thereby permit the member banks in turn and in larger volume to increase their loans discounts, and, correspondingly, their deposits.

The Federal Reserve and credit

But now we come to one or two grave fallacies in regard to the Reserve System. I fear there are many people who still hold to the notion that some mysterious influence or process will operate when this enlarged volume of credit is no longer needed so that it

will be induced, without any compulsion or persuasion, complacently to walk back to the Reserve Bank and surrender itself for cancellation. And possibly another fallacy still prevails among those who believe that because of certain very exacting requirements of the Federal Reserve Act and the regulations of the Reserve Board as to the type of loan which the Reserve Banks may make or the character of the paper which they may discount, that there is some control exercised by the Reserve System as to the uses to which the credit so extended by the Reserve Banks shall be applied by the borrowing member bank. Practical experience in the operation of the Reserve System seems to have disclosed something of importance as to the way credit is extended; as to the way that credit is retired when it is no longer needed; and as to the impossibility of control of the use that shall be made of it while it is in existence.

First as to the extension of credit, which may be described as normal or seasonal or necessary and legitimate. Practically the only motive which impels a member bank to borrow from the Reserve Bank is to make good an existing, or expected, impairment of its reserve. I think you may accept my statement that this is true, but let me give one illustration. Every member bank is required by law to maintain a certain minimum reserve on deposit with its Reserve Bank and, if it fails to do so, it is subject to an interest penalty upon the amount of the impairment considerably higher than the regular rate of discount of the Reserve Bank. This reserve in some cities is figured as a weekly average and in the rest of the country as the average of a fortnight. Every member bank must report its reserve position and submit to penalty if the average is impaired. Now, in practice, the way this works is very simple, and I shall use the case of a large New York City bank to illustrate: Early in the morning it sends its exchanges through the Clearing House and, as the result, it has to pay out reserve money or receives surplus reserve money according to whether it is debtor or creditor. Throughout the day it has deposits made and withdrawn; it makes new loans and has old loans repaid; it buys and sells securities and foreign exchange and furnishes currency to customers. And as the result of these and other transactions, at some hour of the day the member bank must make up what it calls its "position." If its reserve has become impaired as the result of the day's business, it borrows from us to make good its reserve. If the day's transactions give rise to a surplus reserve with us, the proper thing for the member bank to do would be to at once repay any funds which it had already borrowed from the Reserve Bank, although it may not do so. The chances are that if it does not do so it will be because it has an opportunity

to employ the funds in some more profitable way than in paying off the Reserve Bank—that is to say, it can lend the money at a higher rate than the rate which it pays us upon its loan, namely our discount rate.

You will observe that in every case, and practically every day, the member bank, in gauging its reserve position, must of necessity determine whether it shall borrow, and if so how much, or whether it shall repay borrowings already made, and if so how much, and the alternative to borrowing or repaying is either withdrawing loans from the market in some form, if it is short, or making additional loans, if it is over, without recourse to the Reserve Bank in either case. Now, in the long run, it is my belief that the greatest influence upon the member bank in adjusting its daily position is the influence of profit or loss; that while it may regularly borrow to make good impaired reserves, it will repay its borrowing at the earliest possible moment unless the inducement of profit leads it to continue borrowing and to employ any surplus that arises in fresh loans. It may, therefore, be safely stated that as business expands for seasonal reasons or for any other reason, member banks will borrow from the Reserve Banks to make good deficient reserves caused by the expansion of their loans, provided the rate at the Reserve Bank is not so high as to make that borrowing too costly. But, on the other hand, if borrowing at the Reserve Bank is profitable beyond a certain point, there will be strong temptation to use surplus reserves when they arise for the making of additional loans rather than for repaying the Reserve Bank.

I shall discuss the question of rate control later, but I wish first to emphasize this important fact: Practically all borrowing by member banks from the Reserve Banks is *ex post facto*. The condition which gave rise to the need for borrowing had already come into existence before the application to borrow from the Reserve Bank was made, and experience has shown that large borrowings in New York City have in the past usually been explained by the member bank as caused by the borrowing operation of the Treasury, by seasonal demands, but more frequently because of the withdrawal of deposits.

Now as to the limitations which the Federal Reserve Act seeks to impose as to the character of paper which a Reserve Bank may discount. When a member bank's reserve balance is impaired, it borrows to make it good, and it is quite impossible to determine to what particular purpose the money so borrowed may have been applied. It is simply the net reserve deficiency caused by a great mass of transactions. The borrowing member bank selects the paper which it brings to the Reserve Bank for discount not with regard to the rate which it bears, but with regard to various elements of

convenience, that is, the denomination of the paper, its maturity, whether it is in form to be easily and inexpensively delivered physically to the Reserve Bank or not, and it makes little difference to the borrowing bank what transactions may have caused the impairment of its reserve, because the paper which it discounts with the Reserve Bank may have no relation whatever to the impairment that has arisen. To specify more exactly, because this is an important point, suppose a member bank's reserve became impaired solely because on a given day it had made a number of loans on the stock exchange; it might then come to us with commercial paper which it had discounted two months before and which had no relation whatever to the transactions of the day; and with the proceeds of the discount make good the impairment. If it was the design of the authors of the Federal Reserve Act to prevent these funds so advanced by Federal Reserve Banks from being loaned on the stock exchange or to nonmember state banks or in any other type of ineligible loan, there would be only one way to prevent the funds being so used, and that is by preventing the member banks from making any ineligible loans whatsoever, or deny it loans if it had. And, in fact, during the peak of the period of expansion I believe the amount of paper which had been discounted with the Federal Reserve Bank equalled only about 14 percent of the loans and discounts of the member banks. The member banks undoubtedly had a very much larger amount of eligible paper than indicated by this small percentage, but, beyond that, a great mass of ineligible loans, and surely it cannot be claimed that the provisions of the Act, which specify so exactly what paper is eligible, can possibly have exercised any influence upon the application of the proceeds of these loans by the member banks.

I have enlarged upon this point so as to bring out this fact: that the expansion of the loan account of the Federal Reserve Banks, which as you know furnishes the foundation for a much greater expansion of loans and deposits of the commercial banks, can be brought about as the result of any expansion in the banking position of the country, no matter what may be its cause. The eligible paper we discount is simply the vehicle through which the credit of the Reserve System is conveyed to the members. But the definition of eligibility does not effect the slightest control over the use to which the proceeds are applied.

Going a step further, this means that the Reserve Banks will be subject to demands upon them, expressed to be sure in the form of eligible paper but which may have had their origin in any sort of expansive development, stock speculation, real estate speculation, crop moving, building operation, foreign bond

issues, or anything else. Such an influence can arise through the borrowings not only of the United States Government in the market, but indirectly through borrowings of all kinds which have the effect of impairing reserves.

Now going still one step further, let me emphasize the contrast between the conditions which prevailed in the old System and those which have now arisen. I have pointed out how, in the extremes of the trade cycle, we have on the one hand impaired reserves and very high interest rates and on the other hand surplus reserves and very low interest rates. That condition has now quite disappeared. In actual operation, when the reserves of the member banks become impaired, they promptly borrow and they do not have to scramble around among their customers or on the stock exchange to call loans so as to make good the impairment. So, on the other hand, when they have surplus reserves, they are generally inclined to repay what they may have already borrowed from us rather than make new loans, provided of course our rates are properly adjusted to market rates, and they will continue to do so unless borrowing from the Reserve Bank becomes so profitable as to be a temptation.

Now you will observe that under the old System we experienced these periods of reserve deficiency and extremely high rates for money and reserve surpluses and extremely low rates for money, but under the present System all that has changed. Broadly speaking, there is no surplus reserve in the hands of the banks, whether members of the System or not. When business expansion or new loans cause impaired reserves, the member banks borrow from us; when surplus reserves arise for one reason or another, they repay to us. The consequence of this is, of course, that we have no such extraordinarily high or low interest rates as sometimes obtained. The funds flow in and out of the Reserve Bank day by day as sort of a leveling off process, so to speak. Now in a banking System where 10,000 banks, which represent over 55 percent of the banking deposits of the country, have convenient access to a source of borrowing such as the Reserve Banks, what are the possibilities that this borrowing may get beyond control; that the volume of credit may become dangerously enlarged and that in consequence we may be guilty of furnishing credit which might only result in marking up prices without any increase in production, with all of the injustices which are sure to result?

The chances of such a development can only be understood if one is familiar with credit conditions in all parts of the country. They could well be expressed in the form of a map upon which current local rates of interest throughout the country would be expressed as maps are shaded to indicate mountain ranges and their

peaks. It would be found that over a large part of the south, considerable portions of the middle west, and generally throughout the Rocky Mountain region, interest rates are not only high, but in many cases as high as 12 percent. Not only do the usury laws of some states permit banks to lend money as high as 10 percent or 12 percent, but in practice a very large number of the smaller banks throughout the country in states which permit high rates make practically all of their loans at rates ranging all the way from 8 percent to 12 percent, and there are many banks that charge even higher rates by various roundabout methods. But the rate difficulty becomes more acute when it is realized that even within one Federal Reserve district of large area like Kansas City or San Francisco, there may be sections where rates as high as 12 percent are charged, but on the contrary, in the money centers, especially in the city where the Reserve Bank is located, the rates may be little if any higher than those prevailing in New York City.

Bearing in mind, however, that a member bank may be impelled to borrow not only because deposits are withdrawn but equally because it has made loans, in all of those sections where the loaning rate is much higher than the Reserve Bank rate, the temptation will naturally be ever present to expand loans indefinitely so long as the Reserve Bank is in a position to lend. This situation, which prevails in some parts of the country, is quite different from that in New York City, where the vast bulk of bank loans are made at a fairly uniform rate and where it is possible for the Reserve Bank, by an adjustment of its rate, to exert some restraint upon the extent to which its members borrow from it.

Discount rate changes and gold movements

Deferring until later any further discussion of methods of control of borrowing, which means control of the volume of credit, let me now refer to what appears to me to be the most perplexing difficulty in the exercise of such control as may be possible through the discount rate. It is a condition which has arisen as a result of the war and it is appropriate to introduce this part of the discussion by quoting from the report made by the British Committee on Currency and Foreign Exchange,¹ frequently called the Cunliffe report, as follows:

Whenever before the war the bank's reserves were being depleted, the rate of discount was raised. This, as we have already explained, by reacting upon the rates for money generally, acted as a check which operated in two ways. On

¹"Committee on Currency and Foreign Exchanges after the War," better known as the Cunliffe Committee after its chairman Lord Walter Cunliffe, former Governor of the Bank of England.

the one hand, raised money rates tended directly to attract gold to this country or to keep here gold that might have left. On the other hand, by lessening the demands for loans for business purposes, they tended to check expenditures and so to lower prices in this country, with the result that imports were discouraged and exports encouraged, and the exchanges thereby turned in our favor. Unless this twofold check is kept in working order the whole currency system will be imperilled. To maintain the connection between a gold drain and a rise in the rate of discount is essential.

Various influences were set in motion by the war which resulted in our receiving over \$2,000,000,000 in gold in excess of what we held before the war started, giving us now a total gold stock of about \$3,800,000,000, of which nearly \$3,100,000,000 is held by the Reserve Banks. This is roughly a billion and three-quarters in excess of what the minimum legal reserve requirements of the Federal Reserve Act would now require us to hold against our present deposit and note liabilities. Under the provisions of the Federal Reserve Act as originally passed by Congress, the Federal Reserve Banks, when all of the reserves had been paid in, would have had a loaning power of roughly \$900,000,000. With this enormous mass of gold now in our hands, we have a lending power at present in excess of the billion and one-quarter of loans and investments now made of roughly \$4,400,000,000. Had there been no war there would have been no disturbance to the foreign exchanges. With the foreign exchanges fluctuating within the gold shipping points, any considerable expansion of credit in this country which caused prices to sharply advance would very probably have been penalized by a gold export movement. With the exchanges as they now are, that is, with the dollar at a premium practically the world over, gold cannot be exported, certainly not in large quantity except after such a period of expansion and rising prices in this country as would entail a veritable orgy of speculation; such a debauch in credit, in fact, as would reduce the purchasing power of the dollar progressively, first possibly to the level of the currencies of the neutral countries, then to sterling, then to the franc, etc. And this brings me to the point which is of such importance to the management of the Reserve System.

Before the war, as is set out in the Cunliffe report, a large gold export movement was the visible and convincing evidence, not only to the management of the bank of issue, but to the country generally, that the bank rate must be raised. To be sure, other conditions

than a gold movement could well justify increasing the rate of discount of the bank of issue, but a large gold export movement, such, for instance, as we suffered in the early 1890s, which even impaired the gold reserves of the Government of the United States, would require little argument or explanation to convince the country that the bank of issue must take steps to protect the gold reserve.

As we are now situated, it is true that we may from time to time lose small amounts of gold to those countries where the currency has not been greatly depreciated. We have recently shipped some gold to Canada and it was a natural movement because the Canadian exchange had gone to a premium and dollars to a discount as the result of a large loan which the Canadian Government floated in this country. And from time to time the currents of trade and the balance of international payments may indeed result in small amounts of our excessive gold holdings being withdrawn, but with the currencies of most of the trading and banking nations of the world so much depreciated below ours—ranging from 10 percent in the case of sterling to the vanishing point in the case of Germany, Austria, and Russia—it seems altogether unlikely that any considerable amount of our surplus gold will be taken from us. Other than such a debauch of expansion as I have described, the only possibilities of early losses in gold that I can see would be through radical changes in the monetary laws of those nations whose currencies are greatly depreciated, implying, of course, the balancing of their governmental revenues and expenditures.

In the absence of the possibility, I may say even the remote possibility, of any such movement and in the face of the conditions which I have described as to interest rates in different sections of the country, what should be the policy of the Federal Reserve System in exercising this function which is of such supreme importance of regulating or influencing the volume of credit?

Methods of regulating credit volume

This brings us in fact to those important questions of policy in which human judgment plays so large a part. Various suggestions as to the policy of the Reserve System have been advanced by critics and students. They all seem to lead back to the two methods of regulation of credit volume which are, after all, fundamental. One may be described as the exercise of discretion by each Reserve Bank as to the amount which it is willing or which it thinks wise to lend to borrowing members. The other is the exercise of such influence or control as is possible through the fixing of the discount rate. It might at first seem that these two methods of regulation were in conflict with each other, but they are in fact

both necessary and complementary; both have advantages and limitations.

In a general way it is my opinion, although others may differ from me, that so long as present conditions exist, rate regulation will operate effectively in the long run as to the great mass of American bank credit, that is, as to those banks which hold the principal amount of deposits and loans, provided the rates are wisely established by all of the Reserve Banks, and especially by those Reserve Banks which are located in the larger cities of the East. It is in those centers that interest rates are lowest and most stable and where the range is narrowest between minimum and maximum rates; but in the sections of the country more remote from the money centers, where interest rates are higher, as was earlier described, the exercise of a wise discretion by the management of the Reserve Bank is imperative, otherwise the facilities of the Reserve System might be abused by member banks borrowing excessively for profit.

Let me describe some of the difficulties of exercising discretion. First, the discretion, as I have earlier described, must be exercised *ex post facto*. The transactions giving rise to impaired reserves by the borrowing members have already occurred when the borrowing from the Reserve Bank is desired. Applying discretion to the borrowings of members under these circumstances really means that all one can do is to scold them. If the funds are not advanced to make good the reserve, then indeed the reserve balance is used by the member just the same only the penalty rate is higher. In the course of time that bank would restore its reserve because the law would prevent its paying dividends or making new loans until it is restored. That type of scolding, however, generally causes irritation.

A second difficulty is geographical. How can discretion be exercised in the case of applications for loans by member banks so remote that even the mail takes four days one way?

A third difficulty arises as to the basis upon which discretion shall be exercised. Who is to judge as to whether the transactions which cause the reserve impairment were justified or unjustified? A loss of deposits, theoretically, would always justify borrowing, but if the impairment arises because of loans made how is a judgment possible as to any one loan without judging equally of all loans made by a member bank?

Fourth, even assuming that such judgment were possible, who shall say how much each member bank shall be permitted to borrow without exceeding the bounds of prudence? Is it fair to assume that a member bank should liquidate once a year, or twice a year, so that its borrowing requirements are seasonal only, or should

we admit that a certain amount of borrowing from the Reserve Banks may be permanent? Section 4 of the Act provides that a Reserve Bank shall "extend to each member bank such discounts, advancements and accommodations as may be safely and reasonably made with due regard for the claims and demands of other member banks." Much difficulty will be experienced by the bank managers of any one district in making these nice decisions as to its own district members only but, extending this to all the managers of the 12 Reserve Banks, with the 10,000 members with which they must deal, it would indeed appear to be impossible to exercise such discretion with universal justice. Indeed it may well be that in the absence of a Branch Banking System the Federal Reserve System will be the vehicle for furnishing a certain amount of credit permanently to those remote sections of the country where interest rates are high and where liquid capital is deficient.

A fifth difficulty appears to arise as to the regulation of the total amount of credit for the whole banking system, as distinguished from the total which any one member may be allowed to borrow. Obviously the 12 Reserve Banks cannot work out such a nice mathematical arrangement of credit as would serve the requirements of all the banking System and work smoothly, because these requirements vary greatly at different seasons of the year and in different sections.

A sixth difficulty is at once obvious were the System to assume responsibility for declining loans to members which made it necessary for those members to decline loans to customers. It has always seemed to me that the primary responsibility for any loan made by a bank to its customer should rest with the officers and directors of that bank and that the Reserve Bank should never assume that responsibility nor be willing to accept the consequences of exercising it.

And a seventh and last difficulty, although this may not indeed be all of them, is one which I regard as more serious than any of the others—The exercise of powers conferred by the Reserve Act upon the Reserve Banks by this rule of personal discretion, I fear, would develop inevitably in time a bureaucratic attitude of mind on the part of the managers of the Reserve Banks which would be unfortunate indeed for the welfare of the whole banking System. Power excites appetite for more power. Bankers in time would rebel and the public would rebel.

Now, on the other hand, it must be admitted that if a member bank is able to loan all of its funds at 10 percent or at 12 percent, and if it is paying as high as 5 percent interest upon its deposits and has the opportunity to discount paper at its Reserve Bank at 4½ percent, the temptation to make the additional profit by

enlarging its business and discounting freely cannot well be escaped. Nor can the Reserve Bank charge that member bank a rate which would operate as a restraint to its borrowing without charging a like rate to member banks in its own city or in the money centers of its district, which would put the resources of the Reserve Bank entirely beyond the reach of most, if not all, of the large banks of the district. Therefore, however difficult may be the exercise of discretion, in some Reserve districts that would appear for the present to be the only means of exercising a regulatory influence.

On the other hand, let us see how the rate will operate. I think one should look upon the credit structure of the country as an inverted pyramid at the base of which is a foundation of bricks of gold which enjoy the peculiar power of sustaining each its own proportion of the entire inverted pyramid. Those bricks of gold are the bank reserves held by the Reserve Bank. If one brick is taken out of the base, the series of stones resting upon it, representing the volume of credit sustained by that reserve brick, must inevitably come down. And if a brick is added, by so much the pyramid is very shortly enlarged. If the Reserve Bank rate is so low as to be an inducement to borrowing, additional tiers of bricks will be laid at the foundation and the pyramid will be by so much enlarged; and the reverse is equally true if the rate does not induce borrowing—the size of the pyramid may be kept unchanged, or even reduced.

A rate control of the volume of credit has a variety of advantages. One is that it is democratic. It applies to all alike and it requires little, if any, expostulation and remonstrance to make it effective. It must be admitted that an advance in the discount rates by the Reserve Banks will not necessarily influence promptly the mountain peaks of high interest rates in some sections. But I rather doubt whether it is necessary that it should do so. Although not capable of statistical support, I think the statement may be hazarded from past experience that a rate which is effective in checking borrowing in the money centers, or even in reducing borrowing, will indirectly be an influence in all sections of the country. It certainly has the effect of what I might describe as "driving borrowers back home." It is customary for many concerns which do a large business to borrow in the cheapest money markets, no matter where their offices and business may be located. If New York, for instance, should advance discount rates and member banks in turn advanced rates to their customers, a certain number of these out-of-town borrowers would go to their local banks for their loans if the rates there are satisfactory so as to enable the borrower to pay off in New York. This process I believe would be found, could it be analyzed, to be many times repeated, so that the effect of rate changes in the

12 Reserve cities is not confined alone to those cities but extends throughout the country.

Another point frequently overlooked in regard to the effect of the rate is due to lack of understanding of the way in which borrowing from the Reserve Bank originates, that is, through impaired reserves. Every bank knows about what its loanable funds cost it on the average and about what it receives on all of the money which it is loaning. It knows about what its expenses and overhead amount to, and the difference is its profit. When a bank's reserve becomes impaired so that it must borrow, it does not pick out a particular piece of paper which it has discounted at a higher rate of interest and then rediscount that paper at the Reserve Bank rate and figure that it is making a profit, but it is much more liable to see whether the borrowing from the Reserve Bank at the Reserve Bank rate involves in point of fact an absolute loss, or whether it may not be less expensive to reduce loans or sell investments and avoid borrowings. Expressing it differently, the rate at which a Reserve Bank lends to its member bank has no particular relation to the rate which a member bank receives on any of its transactions, but it has a relation to the average of all rates received by the member bank and the average cost of all of its loanable funds. And from this I have always concluded what I firmly believe to be the fact, that a Reserve Bank rate in order to be effective in restraining undue borrowing does not necessarily need to be a penalty rate, that is to say, a rate fixed so high that there will be no differential in favor of the borrowing bank on *any* paper which it may have taken from its customers, even the highest rate paper. But an effective rate will likely be somewhere within the range between the average cost of all its loanable funds, including overhead, and the average that it receives upon all of its earning assets, with due allowance, of course, for loss of interest on reserves.

The chief advantage of rate control, however, is in the way it serves more definitely to regulate the total volume of credit as distinguished from the total amount of loans to any one individual member bank. I would regard the determination of the amount to be loaned to an individual member bank as a credit matter to be determined just as any loan would be determined by any bank to any customer. But on the other hand, I would regard the rate policy of the Federal Reserve System as a national credit policy more directly related to regulating the volume of credit in the country so as to maintain stable credit conditions.

Finally, however, we must recognize that there are many people who believe that more money, and cheap money, means prosperity and happiness. To those people an advance of discount rates may at times be difficult to explain. It is on that account that the absence of

natural movements of gold is most unfortunate; and it is for that reason, as well as for many others, that the world will be better off by a prompt return to the gold standard and free gold payments.

Permit me now to make a brief resume of this long argument: The Reserve Banks have been given the power to create reserve balances and to a large extent to regulate the volume of credit. That volume of credit expands in response to ex post facto borrowing by member banks; the mass of their transactions causing the borrowing having already occurred, there is no means by which the Reserve Bank can control the use which is made of the funds which it loans to its members. Credit so borrowed from the Reserve Banks is less likely to return for cancellation when no longer legitimately required if discount rates are too low, and a high discount rate will operate to induce its return. The present banking System has created a situation where there is no surplus of banking reserves in the country, and where there is not likely to be a deficiency. The real reserve barometer is the reserve percentage of the Reserve Banks. The impulse which will lead the Reserve System to change rates must for the present

largely arise from general conditions, and it cannot be expected that the impulse to advance rates will be given by gold exports for a long time to come. Therefore, the regulation of the volume of credit which is the chief function of the Reserve System must be effected by a combination of rate changes and due caution as to members' borrowings.

The Federal Reserve System has always impressed me as being essentially a social institution. It is not a supergovernment, it is simply the creature of Congress, brought into being in response to a public demand. It was not created only to serve the banker, the farmer, the manufacturer, the merchant, or the Treasury of the United States. It was brought into being to serve them all. Its guiding influence is not profit. Practically all its receipts over expenses go to the government. For some the service it performs is direct, for others it is indirect, but it is not less definite nor any less important. It needs and asks that it be given the benefit of intelligent study and enlightened criticism. Its future depends upon its own good behavior and upon its success in winning and holding the confidence of the public.

George L. Harrison
Governor, November 1928 to December 1940

Harrison was the Bank's chief executive during a period of national economic hardship and financial instability: the early years of his term coincided with the stock market collapse of 1929, the Great Depression, and the bank failures that culminated in the banking crisis of 1933. In this speech, Harrison advocates reforms to strengthen the U.S. banking system and calls for the removal of remaining barriers to international trade. He argues that domestic financial stability in the major trading nations, along with a reestablished system of fixed exchange rates and orderly international payments, is crucial to stabilizing the world economy.

Some Essentials of Monetary Stability by George L. Harrison

The subject of this session of the Academy — Economic Recovery and Monetary Stabilization — has exhausted most of the day. It might easily exhaust most of the night. Being scheduled as the last speaker, I shall make sure that it does not.

The morning session was devoted to the domestic aspects of these problems; the afternoon session to the international aspects. I wish that it were possible for me to tie together these two parts of this subject and to present to the Academy a complete solution. Lacking both the wisdom and the authority to present a final program, I want merely to discuss some of the basic essentials of monetary stability, as I see them, in their relation to recovery and economic stability.

I think we will agree that monetary stability is not an end in itself. What we desire is to promote and main-

tain a prosperous level of trade and employment. Our objective is economic stability, and monetary stability is important only as a means to that objective. We all know that money itself is not wealth — we cannot eat it, we cannot wear it, it will not keep us warm (even though at times it may burn our pockets!). But we know, too, that we live in a money economy, and that a stable mechanism of monetary exchange and a stable measure of value are essential to our economic life.

The importance of international trade

I am one of those who believe that the world has now reached the stage where international trade — the movement of goods from points of surplus to points of shortage — is an important factor in maintaining economic stability and in producing a higher standard of living not only for the world in general but for this country too. It may be true that a nation can live within

Address delivered before the Semiannual Dinner Meeting of the Academy of Political Science, New York City, April 2, 1936.

itself if it must do so, but the price of complete nationalism must be a lower, not a higher, standard of living. In prehistoric time the family unit was the economic unit; the caveman had to content himself with his own ability to hunt for his living; he provided as best he could for himself; his standard of living depended entirely on his own powers to provide for himself. As time went on, as the economic unit grew from the single family to groups of families, or later on, as peoples became organized into geographical or political units, they too, owing to an inadequate mechanism for trade, had to live largely within themselves and to be satisfied with what they could grow or make for themselves.

After centuries of struggle, with the development of transportation and communication to the point where goods and people and opinions can be moved about rapidly and cheaply, the world has learned to expect and to demand much broader opportunities and a much higher standard of living than was possible when those facilities were lacking. Improved methods of communication and transportation have not only made the opportunities for distribution greater, but the press, the telephone, and the radio have stirred the imagination and enlivened the desires of peoples everywhere for the products of other communities and other nations. People are no longer content to accept only that which their own nation affords them any more than people within a nation are satisfied with the produce of their own particular locality. It is true that there has been much discussion and even advocacy of the ideal of a closed economy. I cannot but feel, however, that we are still far from taking seriously such a definition of our ultimate goal—that it is a passing phase, an expression of the world's discouragement with the tangled state of affairs resulting from the war and depression.

The difficulty of maintaining international monetary stability

It was as a natural development of the growth of international trade, and of the recognition of the importance of international monetary stability as a means to that end, that the international gold standard was developed. Our problem today is not that international trade is any less essential to the maintenance of a full economic life, but rather that we have been compelled to recognize by the events since 1914 that international monetary stability has become far more difficult to maintain than it was during the last century. The war disrupted and dislocated previously existing economic and monetary arrangements. We have been struggling with the consequences ever since. Probably no monetary system that human ingenuity could devise could have withstood economic changes of such magnitude and rapidity as the world has witnessed since 1914.

Just when and how we are to succeed in restoring some definite workable arrangement is hard to tell.

Primarily, the specific responsibility for international monetary stability rests with governments. The difficulties cannot be dealt with by economists working under laboratory conditions, nor by central bankers alone. Rather, the solution of these difficulties depends on a whole background of world conditions and on the development of a public understanding of the problem which will make it possible for governments to act, and in turn discourage governments from doing those things which will threaten the success of action once it is taken. The solution requires a meeting of many minds.

Anyone who has followed the course of international negotiations since the war and up to this very moment must realize how difficult it is to reach agreements even under the most favorable circumstances. We all remember the amount of worry and work, the amount of international discussion, and the amount of patience and goodwill that went into the effort to reestablish international monetary stability in the 10 years after the close of the war. In the light of that experience, we have no reason to hope for a quick and easy solution of our present problems.

The complete cure is not to be found in a single international conference, nor in some flash of governmental wisdom, but in persistent and painstaking efforts over a period of time. Our efforts in the 1920s temporarily achieved their objectives but failed of a permanent solution. The question today is whether we can do a better job with these puzzling problems than we did in the 1920s. We start with a handicap of failure behind us which in certain ways makes our task more difficult. On the other hand, we should have learned something from our experiences.

No meeting of minds on international stability can be expected or desired without a favorable combination of circumstances that will give a reasonable assurance that any formal agreement which might be reached will have a fair prospect of being sustained. At the moment, with a large part of the world harassed by grave political uncertainties, and many important governments, whose budgets are already badly out of balance, spending more and more borrowed money for necessary relief and for what I hope are unnecessary military establishments, it is hard just now to foresee any very early combination of circumstances that will permit of definite world currency stabilization by international agreement. We can only hope that there may soon develop a quieter and more cooperative atmosphere.

Already there is a favorable side to the picture. The progress of world recovery since the middle of 1932 is

now creating underlying economic conditions which make international monetary stability more feasible. During the depression the fall of world prices, the general contraction of production, and the decline of national incomes greatly accentuated the many elements of unbalance resulting from the Great War. Each nation felt forced to resort to policies designed to protect its internal economy. The result has been a tangled network of defensive measures such as the depreciation of currencies, the arbitrary control of foreign exchanges, and the restrictions of trade through embargoes, quotas, clearing agreements, licenses, and tariffs.

All these defensive measures, while different in form, were essentially of the same origin, purpose, and effect. Whether they were necessary or unnecessary, the general result was a progressive strangulation of international trade, which in turn reacted seriously, in many cases, upon domestic trade and employment. At the lowest point, the total value of world trade was only one-third that of 1929, and the physical volume of trade had fallen by 25 percent, the largest decline in history.

On broad economic grounds one might now expect a reversal of this process. For just as nations during the depression cut themselves off from external deflationary influences, they ought in recovery to seek, by a removal of barriers, to share in the beneficial effects of a general trade revival. In other words, nature is now on the side of the doctors.

It is a mistake, however, to suppose that the problem will eventually solve itself, even when political conditions become quieter. There is much that can and should be done to pave the way for effective international stability when governments determine, in the light of both the political and the economic situation, that the time is ripe to act.

The value of international monetary standards

One of the first things we may well do is to think through and try to dissipate the philosophy of defeatism which has been growing up with respect to the possibility of operating an international monetary standard, even in modernized form. We must, I think, fairly recognize that there is now a considerable school of thought which is frankly skeptical about the desirability of a return to the gold standard or to any international standard. Their doubt arises in part from the general drift towards national economic autonomy. It is more largely derived, however, from theoretical considerations as to the relation between domestic and international stability, and these considerations have led many to believe that there is a fatal antagonism between the two.

I think that this belief has grown out of the prewar

theory of the gold standard and our experiences of the past 20 years. The prewar theory of an "automatic" gold standard carried the implication, in its abstract logic at least, that economic disturbance, wherever originating or whatever its nature, could be dissipated and corrected by the flow of gold. There was a sound core of truth in this view, but it also contained the dangerous suggestion that all a country had to do was to adopt the international standard and fold its hands in the confident expectation that that beneficent system would protect it from all economic ills.

That there were shortcomings in the gold standard, as we have known it in the past, no one now questions. But it was not the gold standard per se that failed us after the war. World recovery was never soundly reestablished. The reparations question, despite all that was done to effect a settlement, refused to be settled. War debts remained a source of disturbance. The economic position of a number of the countries of Central Europe was never really adjusted. The rates of stabilization of some countries, such as England for instance, were such as to require a greater economic readjustment in those countries than could easily be achieved with existing inflexibilities in those countries. America's new position in the world's economy favored a flow of gold to this country which weakened the position of a number of other countries and formed a basis for excessive speculation here. These and other economic causes for instability were back of the later financial disasters. They were responsible in a large measure for the tremendous volume of short-term funds washing about the money markets of the world in defiance of all the ordinary rules except the rule of fear.

It was against this background that the events of the years from 1931 to 1933 succeeded in generating an overpowering psychology of fear which became in itself a disturbing element apart from its original causes. Fear, following the failure of the Credit-Anstalt in Vienna early in 1931, precipitated a crisis in Germany. Fear then crossed the Channel to England and forced the suspension of gold payments there. Fear of disaster here began to draw gold from the United States in vast quantities. As the focus of fear turned upon this country, it found to feed upon a banking situation built up very rapidly during the past three decades, when weak unit banks were allowed to spring up like mushrooms all over the country. We know the results. When such fear takes hold of the imagination of the people, nothing will stop it until the structure itself collapses.

No one who went through the banking crisis of February and March 1933 will ever forget the irresistible rush of panic through the country. On February 14 the Governor of Michigan declared a state bank holiday and then in rapid succession one state after another in

different parts of the country took similar action until on Saturday, March 4, practically every state in the Union had closed its banks. In the period of about three weeks from February 9 to March 3, the people of America, in fear, had withdrawn approximately \$1,700,000,000 in money from their banks, an amount which equaled about 35 percent of the total money in circulation in the country, even in the boom days of 1929.

We shall never forget the first three days of March in the Federal Reserve Bank of New York. On Wednesday, March 1, in that bank alone, we paid out \$51,000,000 of currency to our member banks; on March 2 it was \$80,000,000; on March 3 it was \$176,000,000. On that last day, March 3, we also lost \$87,000,000 through transfers of funds to other districts, and \$78,000,000 through gold exports and earmarking. In addition, the public crowded into our bank corridors to withdraw gold. In those three days, they carried off in bags, in suitcases, and in their pockets over \$100,000,000 in gold coin and certificates. The movement was cumulative. Each day was worse than the preceding one. This was a fear which would wreck any sort of banking system. It was this situation which President Roosevelt must have had in mind when he said in his radio address to the nation at the end of the bank holiday in March: "All we have to fear is fear itself."

I do not suggest that the collapse of the gold standard in the early years of this decade was entirely due to international maladjustments or to the psychology of fear which spread through the world. We must also recognize the effects of an increased rigidity of the internal economic mechanism of many countries which had been developing over a long period of time. The impact of external forces, operating through gold flows, upon the internal economy of these countries had become much more painful than was formerly the case. It is not too much to say that this increasing inflexibility has become the central economic problem of our generation, the root difficulty, whether one is considering the feasibility of international monetary stabilization or the problem of how to achieve and maintain economic stability at home. Given a rigid internal price structure, rigid costs of management and labor, there is danger that the international gold standard may have exactly the opposite effects from those which the gold standard theory contemplated. Instead of correcting economic disturbance, instead of encouraging stable prices, the gold standard may then become the channel of communication through which disturbances are transmitted around the world, bearing the germs of disease rather than the serums of prevention and cure.

I think this becomes clear if we bear in mind the fundamental distinction between rigid and state prices.

A rigid price structure is a static thing in a dynamic world. It resists adjustment, and so intensifies maladjustment. Stable prices, on the other hand, are dynamic. The ship and the airplane offer no blind resistance to the winds and currents but move steadily through them by a process of constant adjustment. They move, they have a destination, and they carry passengers and freight.

Now, the increasing rigidity which we have witnessed has been cited by some as proof that an international monetary standard is no longer workable. That seems to me the shallow and short-sighted conclusion. It ignores the great dangers and hazards of fluctuating exchanges as well as the competition in defensive measures to which they lead. Financial armaments, like military armaments, are expensive and unsatisfactory. Moreover, there is implied in this whole view the fallacious notion that nothing more is involved than a mere act of choice; that we are entirely free to choose between domestic monetary stability and international monetary stability. It would be nearer the truth, in my judgment, to say that neither is possible without the other. Unless each country is literally to build a wall around itself, our economic problem will always be one of interplay between internal and external forces, and no amount of choosing between fixed or flexible exchanges will get around that fact.

Maintaining monetary stability at home

We are apt to think of the world as an abstraction, as something apart from the countries that make it up. If we get beyond this, we are apt to think of it as consisting of some 60 countries, all mutually and more or less equally interacting upon each other. It is perhaps nearer to reality to think of the world as consisting of a few pivotal countries and their economic spheres. What happens to the world depends primarily upon what happens to these pivotal countries. From this point of view is it not reasonable to conclude that the money question is mainly one of the impact of internal monetary conditions in these few countries upon the remainder of the world? If these countries could preserve monetary stability at home, coupled perhaps with some safeguards against excesses of international capital movements, then fixed exchanges and gold flow would provide a means of imparting to the rest of the world the stabilizing influences developed and maintained in the pivotal countries.

This approach focuses attention on the problem of internal control in the leading commercial countries. On it would depend the achievement of both internal and external monetary stability. There is, after all, nothing very novel in this view. Stated in homely terms, it simply means that we who make up this group can do

much to keep the world in order if we can keep our own houses in order.

We in this country have already made some progress in this direction. The dollar has been stabilized in terms of gold since February 1, 1934. We have maintained the stability in relation to other gold currencies by the free purchase or sale of gold at fixed prices. Furthermore, responsible officials of our government have indicated, in effect, that we are ready to consider international currency stabilization when other countries are ready to do so.

We have enacted legislation designed to avoid a recurrence of some conditions which contributed to our own and to world difficulties. That is particularly true with reference to the speculative apparatus which in the late 1920s drew funds to this market from all over the world—funds which we did not want and funds which the rest of the world sorely needed.

In certain particulars we have amended and, I believe, strengthened our central banking mechanism by giving the Federal Reserve System additional powers of credit control, such as the powers to fix margin requirements and to change reserve requirements. The exercise of these powers will call for wise judgment and courage. It must be admitted, however, that even though the powers of the Reserve System for dealing with credit problems have been increased, they are not complete in themselves, partly because other governmental agencies also have vastly increased powers. The System, therefore, cannot of itself assume final or full responsibility, at least not until some of the emergency laws dealing with monetary and credit matters have expired or have been modified or repealed. These emergency laws not only divide responsibility. Conceived in depression, they risk being real sources of danger in recovery.

So, also, our commercial banking system, which collapsed under the strain of 1931, 1932, and 1933, has been safeguarded in various respects. After the banking holiday of 1933, only those banks believed to be sound were permitted to reopen, so that many weak banks were eliminated from the banking structure. Furthermore, a large number of banks have since joined the Federal Reserve System and are now under some form of national supervision through the Federal Reserve System or the Federal Deposit Insurance Corporation. The capital structure of undercapitalized banks has been restored through private subscriptions and through the Reconstruction Finance Corporation.

Resolving problems in the domestic banking system

In spite of these steps, however, there are still some fundamental shortcomings in our banking system which, to my mind, must some day be corrected if we

Allan Sproul, the third chief executive of the New York Federal Reserve Bank, once referred to central bankers as "members of the silent service." George Harrison was the least disposed of all the New York presidents to make public statements—in fact, "Some Essentials of Monetary Stability" appears to be the only full-length address Harrison delivered during his term of office. Reprinted below is a letter from Harrison explaining his reluctance to give speeches.

Mr. Walter B. French
Chairman, Speakers' Committee
Annual Convention
New Jersey Bankers Association
c/o The Trust Company of New Jersey
35 Journal Square
Jersey City, N.J.

Dear Mr. French:

Please let me thank you for your letter of March 19 through which you were good enough to ask me to speak at the annual convention of the New Jersey Bankers Association, to be held at Atlantic City in May.

I hope I may be perfectly frank with you. For years now, in fact ever since I have held my present position, I have made it a rule, with one unavoidable exception, not to make any speeches. Many times I have been tempted to do so but I have always declined, not so much because of the burden of preparation as because I sincerely feel that I can maintain currently a much greater independence of judgment if I am not committed by some previous public statement. Whether I am right or wrong about this is not so important now as the fact that I am afraid I would be greatly embarrassed if I were now to make an exception to the rule which I feel has kept me out of a good deal of trouble in the past. Some day I may have to change, but I will be most grateful to you if you will understand my position and excuse me now.

I attended a part of the convention at Atlantic City last year. You were all so cordial and hospitable that I hope to join you again this year. I shall have to be in New York on May 12 for my regular directors meeting, but if I can satisfactorily arrange my plans, I shall certainly be there the last two days of your convention. I shall look forward to seeing you at that time.

Faithfully yours,
George L. Harrison,
President

want to avoid future weakness.

Our commercial banking system grew up much like Topsy. At the beginning of the depression it consisted of about 24,000 separate unit banks, all organized and operating under 49 different sets of laws—the Federal law and the laws of the 48 states. Some of these banks were members of the Federal Reserve System but two-thirds of them were not. The Federal Reserve System was superimposed upon this heterogeneous group of banking institutions without any substantial change in the basic system itself. No central banking system can be made a substitute for a sound commercial banking system. So, while many steps have already been taken, we shall not be able to boast of a wholly adequate banking structure until such time as it may be possible to develop a more unified commercial banking system with greater concentration of both authority and responsibility.

This implies a greater uniformity of banking laws between the different states, on the one hand, and between the states and the federal government, on the other. It implies greater consistency and effectiveness of banking supervision, responsibility for which is now divided among too many agencies. It implies the necessity of improving the general character of banking management through the development of some more liberal system of branch banking within appropriate areas. It implies some satisfactory disposition of the knotty problem of separating the commercial banking function from the savings banking function. The combination of these two functions in the same institution has been one of the apparent causes of our banking troubles of the past. Lastly, it implies the ultimate necessity of bringing all the commercial banks of the country into the Federal Reserve System.

The precise answer to these questions is difficult to determine either as to time or method. It will require thoroughgoing and thoughtful study, and perhaps a gradual solution; but we should not rest content until the problem has been recognized and its solution undertaken. I do not mean to imply that our banking system today endangers the economic stability of the country or the funds of its depositors. But I do mean that it will never function to the full limit of its usefulness and safety until these questions are considered and disposed of in some satisfactory fashion.

In this brief summary of some of the things which we have done in this country and still need to do in setting our house in order, I have referred altogether to the financial aspects. To avoid misunderstandings, let me add this general qualification that the financial sound-

ness of a country is not something independent from the soundness of its whole economy. It is not possible to have sound finance unless there is also a sound industrial policy, a sound labor policy, a sound basis for the distribution of the national income, and a sound governmental fiscal policy. To a considerable extent the financial well-being of a country is but the reflection of its whole economic life. So I have been discussing not the whole of the problem but rather that part of it which comes more within the direct sphere of the responsibilities of a bank of issue. One of the results of our complex existence is that responsibilities can never be wholly segregated and fixed. No question of great importance in terms of human welfare can be narrowed down and dealt with in a single sphere. Each question is dependent somewhat on the other.

It is obvious, therefore, that domestic problems will not solve themselves any more than will international problems. We should not be content to sit back and wait complacently for the solution. Each nation, while working for a removal of the international barriers to stability, might profitably direct its course towards domestic stability.

As I say, we in this country have made some progress, but we have more to do. The same thing is true of others. Many nations have unbalanced economies, drastic trade and exchange restrictions, problems of relief and unemployment, or budgetary difficulties, quite apart from political uncertainties. The solution of some of these problems and the removal of at least some of the existing obstacles to international trade might well be undertaken promptly in order to facilitate world monetary stabilization. If these things are not done, if governments persist in stifling international trade for uneconomic reasons, and if nations or whole groups of people over too long a period are denied the right of a decent standard of living because of manmade barriers to the exchange of their goods and services, then, in the light of past history, they will seek that right, sometimes ruthlessly and by force, just as men have done from the beginning. If, on the other hand, nations now persistently and vigorously apply themselves to a solution of these questions, then when the time does come for international monetary action, whether it be between large groups of nations or simply between the nations whose currencies are the principal media of international trade, we can look upon whatever action is wisely taken with a fair degree of confidence that it will survive and contribute to the prosperity and happiness of peoples everywhere and, not least, to our own people.

Allan Sproul
President, January 1941 to June 1956

From the early years of Sproul's presidency until the Treasury-Federal Reserve Accord of 1951, Federal Reserve policy was subordinated to the Treasury's wartime and postwar financing needs. In this 1955 speech, Sproul speaks of the resurgence of flexible monetary policy. He invites the academic economists in his audience to turn their attention to the study of central banking issues and to contribute in this way to informed monetary policy decisions. Sproul's address provides an overview of the structure, techniques, and objectives of the Federal Reserve System and gives particular attention to the policy-making role of the Federal Open Market Committee.

Reflections of a Central Banker

by Allan Sproul

When you invite someone who is not a professional economist to speak on an occasion of this sort, there is always the danger that he will try to talk like a professional economist, and thus make a fool of himself while failing to fool his audience. I am not a professional economist. I hate to make a fool of myself. And I know I could not fool you.

I may have to skate pretty close to what is, for me, the thin ice of theoretical economics, however, because although I am not a professional economist I am a practitioner of an art which must draw inspiration from the work of professional economists. Central banking is largely practical economics, a sort of laggard son of theoretical economics, and I have been practicing central banking for the past 35 years. My long apprenticeship in the field is the excuse for the title which has

been given to my talk, "Reflections of a Central Banker." Maybe that sounds as if I were going to give you some rocking chair stories of my experience, but that is not my intention. I think it would be pretty dull. What I would like to do is to discuss a few of the things I have observed and thought about while I have been an officer of the Federal Reserve System and which I think might merit a larger measure of interest and attention from you.

Monetary policy was in the doldrums for a number of years prior to and during World War II. It had been running fast before a brisk breeze for quite a while prior to that time, and then the wind died down and its sails went slack. Big claims had been made for it as a solvent of our economic ills, and when it couldn't support these claims there was a tendency to discard it in favor of more direct and what might seem to be more powerful economic controls. I suspect that somewhat the same pattern could be traced in the interest of

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economists, and particularly the younger economists, in the problems of central banking. For a time, preceding and following the passage of the Federal Reserve Act in 1913, such problems attracted a lot of men. Then it began to appear that more important work could be done, or more may could be made, in other branches of economics, while interest in central banking suffered a relative decline. Now there has been something of a renaissance in the use of monetary policy as one of the means of achieving greater economic stability without sacrificing too much economic freedom. If we are careful not to claim too much for it, it may hold its place. And I am hoping that central banking problems will similarly recapture the interest of a new generation of economists.

Continuity and change in the Federal Reserve System

Let me speak first and most particularly about the Federal Reserve System, its organization, its policies, and its techniques. You all know the general organization of the System, but you may not all be aware of the evolutionary changes which have been taking place within the general organization. The main outlines of the System are much as they were when the System was established 41 years ago: a regional system, federal in character, with a national coordinating and supervisory body at Washington and 12 regional Federal Reserve Banks which are the operating arms of the System in their respective districts.

Within this framework, however, there has been a definite tendency for power and influence to gravitate toward the center, a corollary of developments in other areas of social, political, and economic organization, as well as a result of growing familiarity at the center with the means of accomplishing things at the periphery. Fortunately, I think, for the development of the System and the good of the country, this tendency has not gone so far as to destroy either the federal character of the System in terms of policy formation, or its regional character in terms of policy execution.

That this is so, is largely due to the development of the Federal Open Market Committee, and its evolution as a body in which the various parts of the System are represented not by blocs, not by opposing groups of members of the Board of Governors on one side and Presidents of Federal Reserve Banks on the other, but by individuals having equal statutory authority and equal statutory responsibilities with respect to one of the most important functions of the System, namely, open market operations.

It is true that the means of credit control, other than open market operations, are scattered about the System in what seems to be an illogical manner. Discount

rates are fixed by the Boards of Directors of the individual Federal Reserve Banks but are reviewed and determined by the Board of Governors, and the setting of reserve and margin requirements is wholly a charge of the Board of Governors. But all of these measures of credit control must be integrated and used as a common kit of tools. The Federal Open Market Committee provides the forum where discussion of their coordinated use can take place without unnecessarily infringing upon the rights and duties of other parts of the System. The illogical in terms of organization charts and precisely drawn lines of authority becomes logical in terms of the evolution of a body which appropriately and effectively represents all parts of the System.

It may be useful to recall how this unique arm of the System developed, not from some sudden inspirational attack on the problem of bringing national unity to a regional central banking system, but by trial and error during a shakedown cruise of about 20 years duration. In the beginning, adjustments of the reserve positions of member banks were made entirely through the discount window. Early open market operations emerged in the form of an attempt by individual Federal Reserve Banks to supplement their earnings. It soon became apparent that the effect of these purchases and sales of government securities (and bankers bills) was to put reserves into the banking system or to take them out without regard for what might be credit policy at the time. The first informal attempt to correct the situation was the adoption by the Conference of Governors (Presidents now) of Federal Reserve Banks, in 1922, of a policy of buying and selling government obligations in an orderly and systematic manner, and the appointment of a committee of five Governors to see that this was done. This loose arrangement was tightened up somewhat by the Federal Reserve Board in 1923, and the rule was adopted, which has since become a statutory principle of open market operations, that the time, character, and volume of such operations must be governed with primary regard to the accommodation of commerce and business and to their effect on the general credit situation. In 1930 an open market policy conference was created which included a representative of each of the 12 Federal Reserve Banks. Statutory recognition of and restraint upon this particular method of conducting open market operations was legislated in 1933, when the banking act of that year created a Federal Open Market Committee and prohibited open market operations of Federal Reserve Banks except in accordance with the regulations of the Federal Reserve Board. The Federal Open Market Committee in its present form came into being with the passage of the Banking Act of 1935, which also made it mandatory for Federal Reserve Banks to engage in open market

operations in accordance with the directions and regulations of the Committee.

So far so good. Evolution has proceeded by a process of natural selection toward a higher form of organism, which retains some of the desirable characteristics of regional organization within a federal system, while acquiring the powers necessary to a coordination of national policy under present day conditions. This organism has survived for 20 years and given evidence of being able to adapt itself to environmental change.

There are those, however, who see in the persistence of present regional representation on the Federal Open Market Committee a serious flaw in our credit control machinery. They appear to believe that this has enabled the poachers to remain on the Committee along with the game wardens, in the person of the five Presidents of Federal Reserve Banks who are members of the Committee along with the seven members of the Board of Governors. The Presidents of the Federal Reserve Banks, they say, are selected by the directors of the Banks—to be sure, with the approval of the Board of Governors. The nine men who serve as directors of Federal Reserve Banks include six men elected by the member banks of their district, and three of these men are bankers. Ergo, the Presidents of Federal Reserve Banks are the representatives of the member banks and, in political terms, must be responsive to the wishes of their constituents or they won't be Presidents very long. And so, it is claimed, the group which is supposed to be regulated and controlled has at least one hand on the controls, or at least five fingers in the pie.

This line of chain reasoning has its appeal if you believe that the Presidents of Federal Reserve Banks are so beholden to commercial bankers for their jobs, and so lacking in awareness of their statutory responsibilities, that they cannot honestly serve the public interest as members of the Federal Open Market Committee. The fact is, however, that the relation between a President of a Federal Reserve Bank and the bankers of his district is not that of an elected representative and his constituents or an employee and his employer. The present somewhat complicated arrangements for the election and appointment of directors of Federal Reserve Banks, and for the appointment of Presidents of Federal Reserve Banks by these directors, have instead a double virtue. First, they inject into the System's conduct of its everyday affairs the standards of efficiency and practical judgment that well-chosen business executives can provide from their own experience—and that includes everything from judging the fitness of a man to administer the complex operations of a Federal Reserve Bank to

the maintenance of its plant and equipment. This has contributed to an operating performance which has protected Federal Reserve Banks from much of the criticism which is leveled against other institutions not prodded toward efficiency by the profit motive. Second, these electoral arrangements keep the Presidents of Federal Reserve Banks directly in touch with men who are aware of banking and credit conditions and economic developments in their districts and who can help to interpret credit policy to the banking, business, and agricultural community, without making the Presidents subservient to whatever may be the selfish interests of any group in the community.

On the even more important level of policy formation, the problem is not comparable to that faced by a government regulatory body fixing rates and conditions of service under monopoly or semimonopoly conditions, nor to the problems of an administrative tribunal watching over observance of the law. The main problem of the central banking system is the appraisal of major developments affecting the whole economy and the formulation of a policy which will influence the money and credit sector of that economy so as to contribute to the stability of the economy as a whole. This is a public service which requires of its practitioners continuous contact with economic processes, and with people in the market places of the country as well as with the representatives of government at its political center. It requires practitioners with an awareness of the problems of an economy which is neither wholly private nor wholly public in character. It requires practitioners who are insulated against narrow partisan political influence on the one hand, and against narrow selfish private influence on the other, but who are responsive both to broad government policies and to the importance of private initiative and private enterprise in giving support to those policies. In my view there has been developed in the Federal Reserve System in general, and in the Federal Open Market Committee in particular, a unique contribution to the democratic administration of such a task. There is no conflict of interest in this administration.

I have spoken of this matter of organization at some length because I think it is vital to the preservation of a Federal Reserve System which retains regional vigor in a national setting, and because attempts to destroy the Federal Open Market Committee, as presently constituted, have been made from time to time. In fact, a bill has been resting in a congressional committee for the past year which would abolish the Federal Open Market Committee and transfer its functions to an enlarged Board of Governors of the Federal Reserve System. That way lies a revolution in the organization of our credit control machinery. I believe that this is a ques-

tion which goes well beyond the mere mechanics of organization and which needs and deserves your closest scrutiny as citizens, as well as economists and men of finance.

Federal Reserve policy objectives

So much for organization. Now for a reference to policies. The preamble to the Federal Reserve Act says that the Federal Reserve System is to be concerned with the provision of an elastic currency, affording a means of rediscounting commercial paper, and establishing a more effective supervision of banking in the United States, and for other purposes. Well, the "other purposes" have long since stolen the show, as must be the case when the manifold objects of an economic experiment are compressed into a few words, no matter how well chosen. We are all now engaged in an attempt to prevent the occurrence of wide and deep economic fluctuations and to mitigate the hardships of the smaller cyclical fluctuations and the necessary internal adjustments of a dynamic, growing, relatively free-choice economy.

The role of the central banking system in this attempt to achieve better balance in our economy has never been spelled out specifically, and probably cannot be. We were not specifically mentioned in the Employment Act of 1946, which gave expression to the present general concept of the economic role of government, but our share of the general responsibility derives largely from that expression of national policy. I have always felt, however, that if we are to be true to the explicit requirements of our own charter, we must emphasize the implicit requirements of this broader charter by combining stability of the purchasing power of the dollar with the promotion of the most effective possible utilization of our resources. We must be alert to oppose both inflationary and deflationary pressures, either one of which can upset the precarious balance of a high-employment, high-production, high-income economy.

Controlling inflationary pressures

We are pretty much all of one mind, I take it, when it comes to opposing deflationary forces which threaten a waste of human and material resources. But there is no such unanimity when inflation—usually trotted out as mild inflation—is in prospect or in being. Here is a central banking problem with respect to which we should, perhaps, have had more help from you than you have so far given us. Are we right in the belief that stability of the dollar and a growing high-level economy are compatible? Or, at least, are we right in our belief that there are so many forces in the economy which now exert inflationary pressure as to make it likely that our role will generally be to resist those pressures in

the interest of sustained economic growth? The siren song of gradual modest inflation, if it be that and not the music of the spheres, appeals to many groups, political and economic. There is a tendency to relax and enjoy the sound of more money in the cash register and the appearance of more dollars in the balance sheet and in the pay envelope. The problem has become a fundamental one in the administration of monetary policy, and your advice and counsel and, indeed, your leadership are needed.

There are those, of course, who think the answer has already been given, and that our powers have been reduced to exerting a gentle tug on the reins from time to time, which is really administered by the horse. With that I cannot agree; I cannot bear witness to the impotence of our central banking system. It still has considerable power, even though we recognize, as I think we must, that general monetary controls can no longer be used so drastically as to bring about a severe restriction of the money supply with restriction of income, production, and employment in its wake. In this we would only find support if we were faced with a runaway inflation due solely or primarily to monetary causes. That is an emergency we have not had to face and certainly do not have any desire to face, even though the actual experience of such a catastrophe might subsequently make for broader public understanding of the anti-inflationary steps we must take from time to time. In developed countries which have experienced hyperinflation the central bank has only to mention the word inflation to bring a large measure of public support to a restrictive credit policy. When we mention inflation as a reason for trying to restrain a boom which shows signs of temporarily exhausting physical capacity to increase the supply of goods and services, and in circumstances when further injections of bank credit are likely to show up largely if not entirely in increased prices, we are apt to be charged with crying wolf when there is no wolf, to be denounced as apostles of deflation. And if actual inflation does not develop, perhaps because we have done our job of helping to curb its development, the accusation against us seems to gain increased validity. You can see why I would like to have aid and comfort in resolving doubts about our ability to combine a stable dollar with a growing, expanding, high-level, peacetime economy.

The exercise of individual judgment

Another aspect of policy formation which concerns me is whether or not undue reliance is now being placed upon the judgment of men, and whether we should seek some automatic or mechanical guides to policy action. I do not think that we have been led too far astray by reading our press clippings. When it is said of

the Federal Open Market Committee that "these 12 men have more financial power than any other official body in the United States history," we may think it will impress our children and grandchildren, but we are also humble enough to recognize that the power we wield is a circumscribed one which cannot be wielded arbitrarily or capriciously. In the first place, it is a power exercised by a group of individuals of differing backgrounds and talents and with differing approaches to the policy actions upon which they must finally agree. There are checks and balances such as are characteristic of our whole concept of government, which give assurance that decisions will be reached by a deliberative process and that power will not be wielded by an individual who might acquire the habits of a despot. In the second place, it is power exercised in the white light of full disclosure: weekly, monthly, and annually our actions are publicly reported for all to examine and to judge. Finally, it is power exercised within the limits of national objectives and public tolerance, which would not permit the Committee to indulge a sense of power or to experiment rashly with it, even if it were so inclined.

But to recognize the limitations of our powers is not to deny their importance. We must and do take them very seriously. We realize that we are trying to measure and adjust the flow of credit in a money economy, and we are steeped in the belief that whether the economy works well or poorly depends in part on our success or failure in discharging our responsibilities. And therein, I think, lies a danger. The oppressive character of such a heavy responsibility leads men to seek some automatic or mechanical device as a guide to policy action, in order to remove the risk of exercising fallible human judgment. The gold standard, as it existed during the latter part of the nineteenth century and the early years of the present century, largely performed this role in those countries which had central banks and which looked first and almost entirely to the state of their balance of payments and the size of their gold reserves in formulating central bank policy. Those "good old days" began to pass into history, however, when central bankers began consciously to interfere with the effects of inflows and outflows of gold upon the domestic credit situation and, through it, upon the domestic economy. They receded further into limbo as national policy became more and more oriented toward the maintenance of high levels of production and employment at home, and tried to fit together the international and the domestic situation without subordinating one to the other.

And yet there have been and no doubt are serious students of central banking who believe that it cannot function properly without a "norm" of behavior, or a

mathematical equation, which will tell its human guides what to do and when to do it. In the present state of our knowledge of the functioning of the economic world, and despite the flood of available statistics which never seems to be out of spate, I do not believe that we can now devise a "norm" or an equation which will relieve us in any substantial and consistent way of the necessity of exercising human judgment in discharging our responsibilities. What we need is not just a catalogue and synthesis of symptoms but an appraisal of a whole situation, including the complex reactions of human beings—businessmen, labor leaders, consumers, politicians. Early in my career in the Federal Reserve System I read a statement by Allyn Young¹ which impressed me then and impresses me now:

In fact, we can be certain that reliance upon any simple rule or set of rules would be dangerous. Economic situations are never twice alike. They are compounded of different elements—foreign and domestic, agricultural and industrial, monetary and nonmonetary, psychological and physical—and these various elements are combined in constantly shifting proportions.

"Scientific" analysis, unaided, can never carry the inquirer to the heart of an economic situation. Judgment and wisdom—the power to take a complex set of considerations into account and come to a balanced view of them—are quite as much needed as facts and theories. The Federal Reserve System needs to operate in the light of all the information it can get, and it needs to have this information organized and analyzed in such a way as to give the maximum amount of illumination. But it also needs the guidance of that practical wisdom which is born only of experience.

If in our time, however, with increasing knowledge of how credit policy works, we can discover a "norm" of action, or a mathematical guide to policy, our task would be greatly simplified. To do that, we shall have to know more than we yet know about how monetary and credit policy actually affect the economy, as a whole and in its various parts, and with what leads and lags. This will mean deep probing into the operations of our money and banking system as it is now constituted, and into the effects of changes of monetary and credit policy upon the whole economy working through the banking system. Until this job is further along, a good motto for central banks may continue to be the lines of the poet:

¹American economist and university professor (1876-1929).

Our stability is but balance
And wisdom lies in masterful
administration of the unforeseen.²

Open market operations

I am now going to turn to one of the techniques of execution of central bank policy, partly because it has importance from a general economic standpoint which transcends its purely technical trappings, and partly because it has been the subject of some public comment and discussion during the past year or two. I refer to the range of open market operations: whether such operations should be rigidly confined to short-term government securities, except under the most unusual circumstances, or whether a willingness at times to operate over the whole range of maturities of government obligations would provide a better means of making credit policy effective. I am not going to reiterate all of my own views, which are already in the record and which are distinctly minority views within the Federal Open Market Committee. There are as yet no absolutes in this business, however. Those who advocate, and I who oppose, the present techniques of the Federal Open Market Committee are merely climbing the hill on opposite sides, trying to reach the same summit of knowledge and effectiveness.

But I do think that the question is one worthy of the attention of at least some of you who are here today, not merely as a matter of casual comment in panel discussions, or writings on other subjects, but as something which has real economic significance and deserves serious study. And I am encouraged in this opinion by the articles which have appeared in the journals during the past year. If the present technique derives from a too rigid application of supposed classical economics to problems of money and credit, we need enlightenment from you.

I had supposed that the classical economists, the men of private property and free markets, didn't think that free markets could provide everything necessary to the public good, and that if they were our contemporaries they might have thought of the market for money and credit as something separate and apart from other markets, and as an appropriate area of intervention by government or agencies of government — intervention at that cross-section of the economy where the public need for some overall economic guidance toward stability could be provided with a minimum of direct intrusion into the details of production and distribution. And I had supposed that this would mean central bank action to help the market in determining the significant characteristics of the maturity structure

of interest rates implied by the kind of credit policy being pursued — not to try to set decimal points on daily quotations, nor to peg a curve, but to nudge the market in the direction sought by credit policy. And finally I had supposed that the effects of increases or decreases in capital values, arising from changes in long term rates of interest, were becoming more and more important in an economy in which public as well as private debts have become so large a part of our so-called assets, and that some direct intervention in this area might at times be appropriate. Whether or not these or contrary suppositions are true, it seems to me that this matter of open market techniques involves problems of economic significance beyond its immediate technical application and that it deserves your study and your published findings.

There is another area of credit administration which can be brought under the loose heading of techniques. That is the problem of selective credit controls, and particularly the control of consumer instalment credit. I suppose that all of us who have a bias against detailed planning "from above" would prefer that credit policy accomplish its major aims by general quantitative controls which work impersonally but pervasively and without interfering directly with individual transactions. But if there has grown up a form of credit extension which, no matter how prodigious its contribution to mass production and mass consumption, is also introducing a dangerous element of instability in our economy, and if it is difficult to reach this credit area by general credit measures without adversely affecting all of the less avid users of credit, is there not a case for a selective credit control? Thackeray says in *Vanity Fair*:

Everybody must have observed how well those live who are comfortably and thoroughly in debt; how they deny themselves nothing; how jolly and easy they are in their minds.

Well, I am not jolly and easy in my mind. I am disturbed by the present situation in consumer instalment credit, just as I was concerned, under different conditions and for different reasons, about stock market credit until the Board of Governors was given power to establish, and to vary, margin requirements. I am disturbed not by the total amount of consumer credit, but by the fact or the indication that successive relaxation of terms has been largely responsible for keeping the ball in the air. This is a process which cannot go on indefinitely, and when it ceases there will come a time when repayment of old debt will catch up with new extensions of credit. The special stimulus of a rapidly increasing net supply of consumer credit, which has contributed so much to the

²Robert Bridges, "The Testament of Beauty."

record production and distribution of consumer durable goods during the past year, will then be gone, at least temporarily. Will it then become clear that we drove our productive capacity to unsustainable limits—for the present—by borrowing consumer demand from the future?

This is a subject on which many voices have expressed many views, but usually they have not been views which seem objective enough to help resolve the question in the best interest of society as a whole. I know that there are those who believe that selective credit controls are a dangerous step on the road to general overall planning, and I have no desire to become a fellow traveler on that road. But I do believe that there is a temptation to abuse consumer credit in boom times, that it can thus become a serious source of instability in our economy, and that we would not jeopardize our general freedom from direct controls by giving the Federal Reserve System permanent authority to regulate consumer credit. I freely admit, however, that this view would be better held if it were based more firmly on objective study and research into the place of consumer credit in our economy and less on observation and opinion. That is the sort of basis for consideration and action which you could provide.

The same or something similar might be said of mortgage financing, but I shall not try to go into that. Economics and social objectives become intermingled so fiercely when housing is discussed as to make calmness and objectivity a handicap, if not a badge of moral delinquency.

The basic question involved in both cases is whether an attempt should be made through regulation of these specific types of credit to exert a stabilizing influence on areas of the economy which, in the past, appear to have been major sources of instability of employment and production, or whether we should be content with efforts to regulate the overall availability and cost of credit, hoping that fluctuations in the major areas of the economy will balance out. Our experience, thus far, suggests to me that general credit controls can exert an effective influence on these particular types of credit only with a considerable lag and that we cannot rely upon countervailing forces in the economy to maintain overall stability.

Perhaps you can see where I have been heading in these somewhat random remarks, which have touched on a few aspects of central banking organization, policies, and techniques, while not mentioning others of equal or, perhaps, even greater importance. In general, my purpose has been to frame a plea for help. A plea that theoretical economics come more steadily and effectively to the aid of practical economics in such fields as central banking.

A public role for theoretical economics

I recognize that theoretical economics is the basis of practical economics. And I recognize that theoretical economists, in our time, seem mostly to have preferred to work on general principles, or on building models of economic performance, rather than on economic policies and their effects. I have not the competence to challenge the value of their work, but I question whether it is enough. I question whether economists individually and as a group can fulfill their obligations as citizens, as well as students and scholars, if they do not try to bring these interests together. I would say we need a revival of political economy, and I would invite you to look on central banking as a good place to start. The economists of an earlier day did not hesitate to jump into the thick of battle over current issues, and it did not seem to lower their academic standing then nor should it now. They were pamphleteers, they organized and participated in public meetings and discussion groups, they brought their influence to bear in any way they could on public officials and private citizens. They were pungent and provocative in debate. Macaulay said of James Mill and his followers on one occasion, "These smatterers whose attainments just suffice to elevate them from the insignificance of dunces to the dignity of bores." Perhaps that sort of thing is a little too violent for our present mood and condition. But it might be better than withdrawing completely into a realm of esoteric jargon, or indulging in an excess of politeness in dealing with your peers and your public, so that issues are seldom drawn clearly enough to attract public attention and promote public understanding. By your studies and your research and your application to the problems of economic theory, you have earned the right to be heard and to give some sense of continuing direction to official action and to public opinion. I would like to see that right more vigorously exercised.

I feel that it could be exercised more vigorously and to advantage in the field of central banking. We have excellent research staffs in the Federal Reserve System, able economists and statisticians and devoted students of money and banking problems. But their work needs more cross-fertilization and critical analysis by thoughtful and disciplined minds outside the System who can apply their talents to this special field without the bias of an organizational viewpoint. Not enough work has been done, I would say, on the monetary problems of a mixed government-private economy, on the functioning and form of a fractional reserve banking system in such an economy, on the growing importance of other financial institutions, which criss-cross both the fields of commercial banking and investment banking, and on the performance and charac-

teristics of our money and capital markets. These are subjects which are becoming critical in the development of central banking.

You have tended, I venture to say, to occupy yourselves too much with the refinement of old ideas which are no longer wholly relevant, with the cataloguing of new economic processes, with the application of mathematical equations to situations too dependent on human behavior to be amenable to such treatment, or with building utopian models of the dream world of the future, while neglecting the hard but rewarding task of studying the present in a way which would contribute effectively to public policy and private well-being. If you will not use it against me, I would say that you have left the latter task to the improvised judgments of practitioners who have lacked the time or the equipment needed to work out a coherent and consistent basis for the actions which they must take.

It is said that there has been a renaissance of monetary and credit policy in recent years. In fact, some extravagant claims are again beginning to appear concerning the power and influence of monetary measures

in curing or ameliorating our economic ills. Governments may be tempted to commit or condone economic errors, in the hope that monetary policy can redress the balance and in the hope that the central banking system will stand as a buffer between the government and an electorate which chafes at restraint. We shall have to guard against asking too much of monetary policy. But it is a fact that monetary measures have re-established themselves, and rightly so, as one of the principal means used by governments to try to keep national economies in order without the stifling restrictions of more direct physical controls.

What I would now like to see is a renaissance in the study of money and banking in general and of central banking in particular. I would like to see a fresh and thorough examination of our existing banking and credit machinery and our money and capital markets. I would hope that out of such study and examination would come new ideas and new proposals which would give shape and direction to future public policies and private actions. It would be a task worthy of the best talent you can bring to bear on it.

Alfred E. Hayes
President, August 1956 to August 1975

During Hayes' tenure as president, the dollar-centered Bretton Woods system of fixed exchange rates matured, then collapsed, prompting a transition to floating exchange rates. In this address, Hayes discusses the development of international cooperation in foreign exchange market intervention and the prospects for reform of the international monetary system. He recommends that countries work together to ensure exchange rate stability, orderly balance-of-payments adjustment, and the financing of imbalances resulting from the first energy crisis.

The International Monetary System—Retrospect and Prospect by Alfred E. Hayes

Today I would like to share with you a look at the development of the international monetary system since World War II, together with a brief attempt to see what may lie ahead. Let me state at the outset, however, that visibility has rarely been lower than it is now. The whole world economy is being subjected to strains greater than would have been imaginable a few years ago. And, as you know, the International Monetary Fund's Committee of 20¹ found it impossible to give the recent annual meeting of the Fund's governors a full

¹The "Committee on Reform of the International Monetary System and Related Issues," better known as the Committee of 20, was created by the Board of Governors of the IMF in 1972 to study proposals for the reform of the international monetary system.

Address delivered before the Business Forum and the Money Marketeers, New York University, New York, November 13, 1974.

blueprint of a new system. In light of this very uncertain state of affairs, it is especially hard to distinguish those tendencies that are likely to be embodied in whatever new system will emerge some years in the future. However, I think the effort is worth making.

My vantage point for these observations is a favorable one. The Federal Reserve Bank of New York is the operating arm of the Federal Reserve System in the international area and we participate in the Federal Open Market Committee's formulation of policies. The Bank also acts as agent for the Treasury in carrying out most of its foreign exchange and other international transactions. We enjoy close relations with virtually all the central banks and other monetary authorities in the world.

In our vaults are \$17 billion of gold (valued at the

official price) held in custody for these monetary authorities—the largest concentration of gold in the world—as well as the bulk of their holdings of U.S. Treasury securities, \$60 billion, well over 10 percent of the total U.S. public debt. A very large proportion of their dollar payments pass through our books, and last year the security transactions we carried out for them came to almost \$300 billion, about three times the huge total effected for the System Open Market Account.

Since my coming to the Bank in 1956, our international transactions have expanded greatly in volume and our overall international activities have grown in importance. This is one area of our responsibilities that over recent years has involved much of the time and attention of the Bank's top executives. One aspect of this involvement that deserves particular attention is the development of the Federal Reserve swap network.

The early years of the Federal Reserve swap network

This network has turned out to be a major contribution to the international monetary system. In general, it is fair to say that the Federal Reserve swap network has proved its worth under both fixed-rate and managed float arrangements and will probably remain an indispensable feature of whatever may be the future international financial system.

I don't have time to go into the mechanics of the swap transactions, but the essence of the operation is a renewable short-term credit of, say, 90 days' duration from one central bank to another. Before the inception of the Federal Reserve swap network in 1962, such central bank swap transactions had been arranged from time to time on an ad hoc basis, notably during the run on sterling in 1961.

In early 1962, the Federal Reserve, with the strong support of the U.S. Treasury, concluded that there would be a continuing and probably increasing need for central banks to help each other out by providing short-term credits to partner central banks whose currencies might come under selling pressure from time to time for a broad range of reasons, from seasonal weakness to unwarranted speculative attacks. It seemed to us in the Federal Reserve that the best way of dealing with this problem was to arrange well in advance for reciprocal lines of credit linking up the major central banks in the world with the Federal Reserve, whose currency, the dollar, was the intervention currency for our foreign central bank partners. We felt, and I think correctly, that by setting up these reciprocal lines of credit in a highly visible way, and in advance rather than waiting until they were actually needed, we could provide an assured reinforcement of the international

financial system. I hasten to add that neither the Federal Reserve nor any of its central bank partners in this endeavor ever had any illusion that the swap network could do more than provide such a reinforcement. After all, the continued operation of any stable international financial system depends fundamentally upon the ability of the United States and other major trading nations to maintain reasonable equilibrium in their balance of payments.

From April 1962 until the closing of the gold window in August 1971, the Federal Reserve swap network grew from a single \$50 million swap arrangement with the Bank of France to a \$11.7 billion credit system embracing 14 central banks and the Bank for International Settlements. During this decade, many countries saw their balance of payments swing from surplus into deficit and back. As various currencies came under temporary selling pressure, the swap network was called upon to make available an overall total of \$27.1 billion of swap credits. Of this total, \$11.8 billion were drawings by the Federal Reserve, and \$15.4 billion drawings by our partners. In general, the swap credits accomplished their purpose of enabling countries to ride through speculative squalls and other short-term difficulties, and the repayment record was generally excellent.

The defense of sterling in the 1960s

Of the many financial events of the 1960s in which the swap network played a role, the defense of sterling merits special attention. From the restoration of convertibility in 1958 until Britain's devaluation of sterling in 1967, sterling was the currency that caused by far the greatest concern in financial circles. Sterling's malady was not a steady one, for it was punctuated by periods of strong recovery and restored faith—only to be followed by new difficulties. I shall not try to analyze the reasons for sterling's recurrent weakness. But since it had a reserve currency role second only to that of the dollar, its fate involved the whole monetary system and was a matter of keen interest to other countries. There was wide recognition of the danger that a devaluation of the pound would prove to be a prelude to speculative attacks against the dollar. As it turned out, these fears were borne out almost immediately after sterling was actually devalued. In recognition of this interdependence, the Federal Reserve participated with other major central banks in the defense of sterling. Naturally only the country whose currency is in question can make the basic political decision to devalue or revalue. But as long as the will to defend the sterling parity continued within the United Kingdom, I believe our concerted efforts in its behalf were thoroughly justified.

During this period, the drawings by the Bank of England on the Federal Reserve swap network and on other ad hoc central bank credit arrangements fluctuated quite widely as sterling moved up and down. The reliance on central bank credit did not obscure the question of exchange rate adjustment. In fact, six months before the devaluation of sterling in November 1967, the Bank of England had completely paid off all outstanding central bank debt. Incidentally, in the case of the dollar, the major buildup of swap indebtedness of the Federal Reserve, totaling more than \$3 billion at the time of the closing of the gold window, was incurred only during the very last weeks of dollar convertibility.

The inconvertible dollar

The relative trade position of the United States had begun to deteriorate in the late 1950s and early 1960s, and vast sums were already moving abroad for investment to take advantage of faster growing markets and lower costs and to jump Common Market barriers. But it was the sharp acceleration of U.S. inflation after mid-1965, together with the sterling devaluation, that really brought dollar convertibility into serious doubt. Whether or not the decision of August 1971 could have been avoided or deferred through timely measures by all the major trading nations before the final speculative wave struck the dollar will be debated for a long time. In any event, cutting the tie between the dollar and gold had a traumatic effect on the international monetary system from which it has not yet recovered. Because of its primacy as a trading and investment currency, the dollar had become by far the principal medium for official intervention in the exchange markets and also by far the largest component of monetary reserves except for gold.

With all respect for the valiant and painstaking efforts to establish the SDR as an acceptable substitute, it cannot take the dollar's place as the chief vehicle for official intervention. Moreover, it must be acknowledged that gold still represents the most cherished form of monetary reserves in a great many countries.

After the tie to gold was cut, it came to be quite widely held that we need feel no concern as to how low the dollar might sink in the exchange markets, even under periodic speculative attacks, because a cheaper dollar would assure a better competitive trade position for U.S. products. The philosophy of "benign neglect" overlooked the serious inflationary impact that a depreciation of the dollar could have, and indeed did have, on the domestic price level. It also neglected the fact that the bulk of the world's trade was denominated in dollars, the largest financial markets were dollar markets, and most countries of the world still looked to the

dollar as their main monetary anchor. An anchor that bobbed about wildly in the heavy seas was not very helpful. Furthermore, this philosophy posed the danger of encouraging a spirit of competitive exchange rate adjustments and monetary controls, which if it had developed, could have destroyed much of the fabric of economic cooperation that had been woven so carefully in the years following World War II.

The Federal Reserve swap network lay dormant for slightly more than a year after the closure of the gold window while the negotiation and launching of the Smithsonian Agreement² got under way. By July of 1972, however, it had become clear that the United States could not leave the entire burden of supporting the Smithsonian dollar rate to foreign governments, and so the Federal Reserve resumed intervention in the exchange markets, again relying upon the swap network to meet its needs for foreign currencies.

In early 1973, another tidal wave of speculation swept through the exchange markets, and in February 1973 it was decided to devalue the dollar for the second time. A modest amount of Federal Reserve swap debt incurred just prior to the devaluation was quickly repaid, but intervention was not resumed as both the United States and the major European countries agreed in March 1973 to let the dollar float. Unfortunately, the dollar did not float, but sank precipitously, as speculative pressures cumulated. By early July 1973 exchange trading in the dollar was grinding to a standstill. At this critical juncture, the Federal Reserve was again called upon by both the U.S. and European governments to resume exchange market intervention, backed up by a major enlargement of the swap network to nearly \$18 billion. (The total now stands at almost \$20 billion.) The very announcement of this policy shift from a free to a managed float of the dollar brought about an immediate strong recovery of dollar rates. From then on the tide began to turn.

Over the succeeding year, Federal Reserve intervention to support the dollar amounted to somewhat more than \$1 billion, mainly financed by drawings on the swap network, all of which were repaid in less than six months' time. Today, as the markets realize that the authorities are fully prepared to show their presence, violent speculation has subsided and exchange markets are orderly. The oil embargo and skyrocketing oil prices have, of course, contributed to sizable swings in the exchange rates over the past year.

²The Smithsonian Agreement of December 1971 realigned currencies by devaluing the dollar against gold and revaluing major foreign currencies against the dollar. The Agreement also established the freedom of countries to declare central exchange rates against foreign currencies rather than parities against gold and provided for a wider band of permissible exchange rate fluctuations around central rates.

The financial aspects of the energy crisis

The quadrupling of the price of oil has altered the whole international financial outlook more violently than any other event in many decades. I need not remind this audience that the magnitudes involved in the prospective shift of monetary reserves to the oil-producing countries really stagger the imagination. No wonder there is widespread pessimism about devising arrangements that can handle such flows. Even the most successful arrangements would still mean overwhelming burdens of debt service for many countries, both developing and developed, that could not be carried indefinitely. This prospect underlines the great need to bring about—through cooperative measures by oil producers and consumers alike—a reduction of this huge imbalance in international payments as rapidly as possible, with a view to its elimination in the foreseeable future.

This may seem a dreamer's objective, but I see it as the only way out and I would hope that the joint efforts necessary toward this end will get under way before too long. The aim should be a two-pronged reduction of the imbalance: to reduce the volume of oil payments, and in the longer run, to speed up the oil-exporting countries' purchases of goods and services.

Regarding the gross flow of oil payments, much has been said of the need to achieve a lower level of oil prices, and I endorse this aim. I would also like to see a greater emphasis on effective measures to conserve fuel, however unpopular they might be, and on the development of alternative energy sources.

The other side of the imbalance, the inability of the oil-exporting countries to spend their newly found wealth promptly on imports from abroad, is clearly even more difficult to tackle and has to be viewed in a longer context. A great deal of skepticism prevails regarding the possibility of ever raising the level of the oil-exporting countries' imports anywhere near the value of their oil receipts. Their imports, however, are already rising at a surprisingly rapid rate. And for the future, massive international programs of economic development not just in individual countries, but in entire regions, such as the Middle East, should make it possible for the oil-consuming countries to make the transfers of resources necessary to pay for the oil they require. At the same time, of course, such programs would help the oil-exporting countries speed their efforts to utilize their underground resources for the benefit of their coming generations.

In the meantime, while the large imbalances continue, the world must find better ways for financing them. So far, private markets and institutions have taken care of most of the oil payments without undue difficulty. But it would be a bad mistake to assume that they can continue to do so much longer. For one thing,

the oil payments are now running at a much higher rate than even in the first half of the year, apparently at least 50 percent higher. No doubt the commercial banking system will retain a role, but from now on a variety of public channels will have to be relied upon to an increasing extent. This will be necessary if we are to avoid serious dislocations in the weaker—but not necessarily the smallest—nations, and the consequences these would entail for the trading and investing world in general.

The term "recycling" has become very popular in recent months. To me it is a misnomer—or worse—for the problem at hand. It tends to conceal the basic question of who should assume the credit risk in lending to the countries beset with economic difficulties.

Notwithstanding the risks and difficulties involved, if the United States receives a large share of the investment flows from the oil producers, as a good many market observers think quite likely, careful thought will have to be given to means of channeling some portion of these flows to less fortunate countries experiencing big oil deficits—and this will call for political awareness as much as technical skill.

More fundamentally, the oil-exporting countries will have to take on themselves an increasing share of the risk of the financing of the oil deficits through bilateral credits and grants. There are already some encouraging signs to this effect. These countries will probably also wish to undertake a growing volume of the oil-deficit financing through international organizations. There would thus seem to be a major role in the financing of the oil deficits for these organizations, such as the International Monetary Fund and the World Bank and their affiliates, or even for new bodies.

Reflections on Bretton Woods

Before I attempt to look further ahead at the prospects for reshaping the international monetary system, I should like to reflect on Bretton Woods.

In the last few years, views as to the merits of greater "flexibility" in the international monetary system have exhibited substantial swings. The Bretton Woods system, based on mutually agreed and preestablished par values for all currencies, embodying a clear code of international monetary behavior, monitored and guided by the International Monetary Fund and shared in by all the principal countries of the non-Communist world, was widely disparaged after the closing of the gold window in August 1971. For a while it was the conventional wisdom to welcome a brave new world in which exchange rates would no longer be instruments of economic policy but would be left largely to seek their own levels in the market. This new world, it was thought, would no longer have to fear exchange "crises" in

which the dams finally break after large-scale efforts of central banks to maintain untenable rates prove futile. Moreover, it was claimed, governments would no longer have to compromise domestic economic policies to protect exchange rates. Inflationary consequences of large payments imbalances could be avoided, as surplus countries would no longer face the need for huge support operations. At the same time, deficit countries could escape having to restrain domestic spending to stem vast losses of reserves.

However, it didn't work out that way. In the first place, during the brief periods since the end of Bretton Woods when exchange markets were on their own, it was not surprising that speculative pressures tended to cumulate and exchange rates were driven far from any likely equilibrium levels. Thus serious exchange troubles were not banished but took the form of violent movements of exchange rates rather than violent movements of exchange reserves. To be sure, surplus countries did not have to face the inflation potential of unwanted reserve gains. But excessive exchange rate swings aggravated inflation in deficit countries without bringing fully corresponding price moderation to the surplus countries whose exchange rates were appreciating. The experience also showed that the hope of freeing domestic policies from external constraint was largely illusory.

In any event, after the Bretton Woods system was abandoned, it became clear that exchange rates were still a matter of major political and economic importance in every country. Hardly any government or its monetary authority was willing for very long to let its own currency float entirely in response to market forces. In fact, since March 1973 (when floating began) official intervention in the exchange markets to moderate exchange rate fluctuations has totaled some \$52 billion by the Group of Ten countries alone.

Thus, in my view, the recent experience has underlined some of the positive aspects of the Bretton Woods system. By providing an international framework for exchange rate changes, with the backing of substantial amounts of credit, both automatic and discretionary, that system made it possible for such changes to be made without international discord and with a minimum of restrictions on the international movements of goods, services, and capital. To be sure, as time went on, exchange rate stability sometimes turned out to be rigidity. It is, of course, a truism that no international system can either compensate for the inability of sovereign member states to manage their affairs properly or offset their unwillingness to pool some of their sovereignty for the benefit of a wider community. More fundamentally, what brought the Bretton Woods system to an end were the asymmetries in the adjustment pro-

cess that increasingly came to the fore: on the one hand, the asymmetry between the strong pressures exerted on debtor countries and the weaker pressures felt by creditor countries, and on the other hand, the asymmetry in the meeting of deficits of reserve currency countries and countries without such currencies. But as we look ahead, these shortcomings should not blind us to the old system's very considerable contributions to an unprecedented growth in world commerce.

Prospects for the international monetary system
As I said at the outset, the past year's events have made it even more difficult than before to foresee the shape of tomorrow's monetary system. I was always of the view that, once the key element of the postwar system no longer existed, that is, the link between the dollar and gold, it would not prove possible to agree in advance to a complete new system. Rather it would be necessary to rebuild gradually on an ad hoc, experimental basis, with various blocks of the new system being put in place as they proved their worth. The oil problem merely strengthens my conviction in this regard. If asked to mention specifics of the system that will eventually develop, about all I can do is to cite a few principles that I think must be adhered to and to point out some areas that call for special attention and study.

We need agreed-upon rules of conduct and balanced pressures to help enforce them. The area of exchange rate policies is crucial to the well-being and growth of the world economy, and fortunately it is one where we can begin promptly, building upon our recent experiences. A country's exchange rate is too vital an element of its economic welfare to be left in the hands of often capricious exchange markets. At the same time, it affects other countries as well, particularly among the major trading nations. As a result, exchange rate relationships bear the seed of conflicting national interests. Unless these are reconciled, no monetary system can function properly. A framework of greater exchange rate stability is one that lends itself best to such a reconciliation. But reasonable exchange rate stability should be a primary aim in its own right. With it, exchange markets can function better, world trade and payments have a more assured basis on which to grow, and national governments have the opportunity to carry out domestic policies in a climate of relative certainty. And it must not be forgotten that such stability is in the interest of the developing countries, as well as of the major industrial powers. The developing countries have in recent years been seriously exposed to violent swings of exchange rates that were not of their making. No wonder they have been quite vocal in urging a return to a system in which there is some reasonably

stable framework to which they can tie their own currencies.

As we move toward greater exchange rate stability, and I believe we are doing so, we must not overlook the need for orderly procedures for changes in rates. The balance-of-payments adjustments that are necessary as the world economy grows and develops, at times at a different pace in individual countries, cannot always be made through domestic policies alone. But to give such policies a chance to be effective requires international credit lines that can be utilized as and when needed. The IMF quota facilities, the Common Market's Fund, the Federal Reserve swaps, and other central bank credit lines are essential components of an orderly monetary system.

Thus, as I see it, exchange rate stability, orderly balance-of-payments adjustments, and a solid network of international credit arrangements are some of the building blocks for the new system. Beyond this, a multitude of problems such as the role of multinational corporations and banks, surveillance of the Eurocur-

rency markets, better coordination of national monetary policies, and the plight of the poorest among the developing countries need thorough attention.

Progress on all these fronts is unlikely to be as rapid as we would like. Unfortunately, the oil problem and the worldwide disease of virulent inflation, and now the fears of recession, enhance the risk that short-sighted nationalistic tendencies might come to the fore.

Of one thing I am certain, however. The world we live in is one where interdependence is a vital reality that we cannot afford to overlook. We must bend every effort to find cooperative and durable answers to our major economic problems. In the specialized area of financial and monetary cooperation, the world's monetary authorities have made a good start in the past few decades. In particular, I can attest from personal experience that central bankers have learned to work together intimately and effectively in matters involving the exchange markets. I see every reason to believe that effective means of international cooperation will be found in this very difficult new world we face today.

Paul A. Volcker
President, August 1975 to August 1979

During Volcker's presidency, the role of monetary aggregates as a guide to policy came under increasing public discussion. In this speech, Volcker discusses the advantages and pitfalls of a strategy of targeting monetary aggregates and alternative operating procedures. He argues that monetary targeting imposes a beneficial discipline on Federal Reserve policies. He also notes, however, that instability in velocity over horizons relevant for policy and the possibility of credit market disturbances make attention to other sources of information imperative.

The Contributions and Limitations of “Monetary” Analysis by Paul A. Volcker

Larry Klein's invitation to address this annual joint luncheon of the American Economic and Finance Associations is a special honor. But for one engaged in policy making, it also presents a special challenge. He may like to think of himself as a practical man but certainly not, as Keynes once put it, the “slave of some defunct economist.” At the same time, he can hardly regard himself as “quite exempt from intellectual influences.”

In that spirit, I would like to take this opportunity to consider some of the approaches and practices of central banking in the light of modern economic analysis.

Now, I fully realize that neither central banks as a genus nor the species Federal Reserve — nor even that

special variety known as the Federal Reserve Bank of New York — have had a reputation of moving in the vanguard of professional opinion. Nor would I apologize for a certain intellectual conservatism. What we do must take account of human attitudes and institutional settings that necessarily change slowly. Sorting out what is true and valid from what is fashionable is never easy, and we have no laboratory apart from the American economy itself.

Yet, as one who spent almost 20 years outside the Federal Reserve before returning last year, I can testify directly about how much has changed over that period.

I learned my economics and my central banking in the first full flush of the *General Theory*. Perhaps symbolically, in the mid-1950s it was still something of a challenge to calculate a meaningful money supply

Address delivered before the Joint Luncheon of the American Economic Association and the American Finance Association, in Atlantic City, New Jersey, on September 16, 1976.

series from the mass of statistics issued by the Federal Reserve, while markets hung on the latest release of data on free reserves or bank loans. Today, the situation is almost reversed. Our computers spew out M1s in seemingly infinite variety and with great rapidity. Meanwhile, analysis of the asset side of financial balance sheets seems relegated pretty much to a few specialists—or to bank examiners and the SEC.

We need not look to “defunct economists” to help explain the change but to a school of thought that is very much alive and well!

Monetarists and monetary targeting

I know one always treads on dangerous ground in using a shorthand label to describe any school of economic thought. I will therefore run a risk of oversimplification and even injustice in characterizing some of the views of the monetarists today—assessing the contributions and limitations of that analysis. But I don’t think there can be much doubt that that school—for all the differences within it—has helped bring a distinctly different flavor to much macroeconomic policy making and analysis in recent years.

Certainly, it has helped bring a new focus on the relevance of monetary policy—the proposition that the stock of money does matter. To be sure, relatively few economists—and almost no central bankers—have openly argued the opposite proposition. But implicitly or explicitly, there was a rather common assumption two or three decades ago that while the money supply did have an effect on credit markets and interest rates that received so much attention, the induced effects on the economy were not terribly powerful in most situations. Changes in the supply of money moved us along a rather elastic liquidity preference schedule and the investment demand function was thought to be relatively insensitive to interest rates. We therefore need to look at fiscal actions and to other exogenous forces as the main determinants of economic activity.

As I shall suggest later, the idea that, at least in the short run, the supply of money and interest rates are related still seems relevant today. But the monetarists have usefully emphasized the danger of confusion between nominal and real rates and the role of price expectations. They have forcefully made the case for the view that in the long run velocity is not related to the stock of money and that, in the same long run, an excess supply of money contributes not to real income or wealth, but simply to inflation.

That latter point is, of course, one of the oldest propositions in the history of economic thought. But there is no doubt that too often we have lost sight of it amid the urgent search for solutions to immediate policy problems.

The further extensions of the idea—that the rate of monetary expansion can have relatively little effect on the real rate of interest over time, and hence on the mix of consumption and investment—are certainly controversial in their more extreme form. But certainly there is more awareness today of the real limitations on the possibilities for manipulating the mix of fiscal and monetary policies to achieve our objectives.

More generally, while the insight is hardly confined to monetarists, modern analysis has typically emphasized the length—and probable variability—in the lags between policy action and the effect on the economy. As a result, there is less faith in our ability to make short-term adjustments—to “fine-tune” the economy.

These lessons have not been lost on central banks, in the United States or elsewhere. In shaping their policies and policy pronouncements, monetary officials have provided tangible evidence of the new emphasis in the greater prominence given the behavior of broad monetary aggregates.

At the same time, central banks have long shared an understandable human interest in wanting to hedge against an uncertain future. They want to retain the ability to respond flexibly to emerging developments, to probe experimentally with new policy measures, to test market reactions, and to learn from those reactions before fully committing themselves to new directions. Indeed, this flexibility to act and react has long been considered a great strength of monetary policy. Concern that a needed degree of flexibility might be impaired accounted, I believe, for some initial reluctance by the Federal Reserve in adopting the practice of publicly specifying explicit goals or targets for monetary aggregates for any substantial period of time ahead.

More than a year ago, however, responding to congressional intent, the practice of each quarter announcing such targets a year ahead was adopted—always retaining the right to change the targets in the light of emerging developments.

From my viewpoint, this experiment in “practical monetarism” has proved useful. It has assisted in communicating our intentions both to the political authorities and to the marketplace. I suspect it has provided a focus for more informed and constructive public debate. Indeed, I am hopeful that by clarifying the nature of the policy choices and dilemmas and by more clearly relating today’s decisions to a longer term horizon, the temptation to engage in more purely political debate about policy choices has been moderated.

But most important, I think, is the discipline it provides for our own debate within the Federal Reserve. In my experience, each of our short-term decisions has needed to be justified and rationalized in our own

minds against our earlier and broader judgment about what growth in money seems appropriate over a longer period. The pressure to react, and the temptation to overreact, to each new piece of information must be filtered through that earlier judgment and longer perspective.

The Federal Reserve is not alone among central banks in adopting that sort of approach. In that sense, we have all been influenced by the monetarist debate. But a consensus on the usefulness of that approach does not, of course, imply consensus on the substance of policy—just where the targets should be set, the circumstances under which they might be changed or temporarily set aside, and the degree of importance accorded other variables, including interest rates. Moreover, there is no general agreement on which monetary aggregate is most relevant—a matter of some importance since both the trend and short-term fluctuations frequently diverge.

Implementation of monetary targets

Policy is made up of a succession of short-run decisions. In making those decisions we face the simple fact that, whatever the stability in the relationship between money and nominal income in the longer run, there is considerable instability in the relationship over time horizons relevant to policy makers. Certainly the relationships between money interest rates and nominal income have been unusual over the year or so since I rejoined the Federal Reserve. Specifically, over the first year of an economic recovery that has proved very close to the average of postwar recoveries, the velocity of M1 grew substantially more rapidly than history or most econometric analysis would have suggested, taking account of the stability of interest rates. Indeed the phenomenon of stable or even declining interest rates taken alone is highly unusual during the first year of recovery.

Suppose an approach had been followed since the spring of 1975 that sought to set aside judgment in favor of the statistical rule book. Presumably a monetary target would have been set significantly higher than the roughly 5 percent growth that actually occurred, assuming of course a desire to achieve a similar pattern of growth. Those who, in contrast to the monetary school, emphasized last year the desirability of roughly stable interest rates to promote vigorous recovery have seen that objective materialize. But members of this group typically grossly overestimated the monetary growth that would prove consistent with that scenario. I can only conclude that in periods such as that we have just been through, we need to be alert to possible shifts in the demand for money. Movements in interest rates are an essential source of information

about those shifts in money demand and other relevant developments and at times remain a useful, if not uniquely useful, guide to appropriate policy.

Recognition of the broad relevance and desirability of longer term monetary targets also has left unresolved important tactical issues as to just how these targets should be achieved. This is a matter vigorously debated by monetary economists out of concern that the choice of technique biases the result. I reveal no secret when I say that the subject returns again and again in the discussions of the Federal Open Market Committee and is a major preoccupation of the work of the supporting staffs at the Board and the Reserve Banks.

The Committee's record of policy actions, now released about a month after each FOMC meeting, reflects the results of discussion of the appropriate tactical approach adopted by the Committee at each meeting. (I might note in passing that the amount of information provided in these records probably sets a standard among the major central banks of the world and represents a degree of openness entirely unknown to a central banker of an earlier generation.)

These policy records show that while the precise approach varies with circumstances, recent practice typically involves numerical "tolerance" ranges for key monetary aggregates for the period immediately ahead. While influenced by the immediate economic circumstance, these ranges are designed to be generally consistent with the one-year targets, allowing for the short-term volatility of the numbers and expectations about their near-term behavior. A range is also established for the federal funds rate, taking into account the evidence we have about the interest rate-money supply relationship. Then the Open Market Account Manager has the job of providing reserves on a week-by-week basis at a rate that is expected to produce a federal funds rate (and related money market conditions) within the given range, typically moving higher or lower within that range as the aggregates appear to be relatively strong or relatively weak in terms of the objectives for those magnitudes.

I have not found anyone in the Federal Reserve who is wholly satisfied with this technique. To me, one problem is that it has encouraged a high degree of sensitivity throughout financial markets to even relatively small and potentially transient movements in the federal funds rate, because this rate is felt by the market to reflect so heavily official intentions. But the relevant question, as always, is not whether the present technique is problem free, but whether more satisfactory approaches can be devised. No doubt, improvements are possible and will come. But no one should be under the illusion that any tactical change will end con-

trov­ersy that, in the last analysis, stems more from dif­ferent judgments about relevant policy variables than about operating techniques.

The proposal is frequently made that the Federal Reserve would be more successful in achieving desired aggregates within relatively short periods if it simply adopted a target path for bank reserves, the monetary base, or some variant thereof. These reserve magnitudes (at least those exclusive of member bank borrowings) are more or less directly under our control, and they can be related to the money supply by projections of the "money multiplier." Usually, the concept is that these targets would then be adhered to, almost regardless of short-term money-market implications.

One technical question arises immediately. While I do not pretend to econometric expertise, I do know that a massive amount of research has been conducted in this area. The apparent result is that the relationship between money and reserve aggregates, particularly in the short run, appears no more reliable than the relationship between interest rates and money. In either case—whether one uses money market conditions or reserve measures as the immediate tactical targets—one comes up against two hard facts: first, the monetary aggregates are going to be subject to considerable short-run uncertainty, and second, changes in the week-to-week tactical targets will have their impact on monetary aggregates only with a significant (and uncertain) lag.

Let me be more explicit. When short-term tactical objectives are couched in terms of money market conditions, it is necessary to forecast what the demands for the various categories of bank deposits and currency are likely to be under given money market conditions. Alternatively, if the short-term tactical procedures are couched in terms of some reserve aggregate, such as nonborrowed reserves, it is necessary to forecast the reserve-deposit multipliers for the various monetary aggregates—and of course one must also successfully forecast and offset market factors affecting reserves in order to hit the reserve target.

We have techniques to make the needed forecasts with both the interest rate and reserve approaches. The trouble is the forecast errors are large no matter what procedure is used, particularly over periods of one to three months. Indeed, unimpressive as they are, I am told some of the correlations observed in historical data between reserve measures and monetary measures would prove to be spurious under a regime of rigid reserve targeting.

These uncertainties are likely to make precise monetary control elusive under any set of procedures. A common characteristic of the two approaches is that the effect of changes in either operating target—

interest rates or reserves—on the various monetary aggregates takes time to have its full impact, and the largest impact is not the closest time horizon.

The relevancy of these twin problems of forecasting errors and lags—whatever the tactical approach—is that we must constantly balance the danger of *underreacting* to deviations of the aggregates from target paths against the danger of *overreacting*. Clearly, there are risks in not responding to bulges or shortfalls in the money supply relative to objectives. For example, if growth in the monetary aggregates falls short of objectives, but the shortfall is treated as a momentary aberration and no action is taken, a cumulative shortfall may develop, making it harder to retrace our steps. At times, the bulges or shortfalls may reflect important underlying developments, such as an unforeseen change in business activity that we would ignore at our peril.

But the danger of overreacting to deviations in the aggregates from targets is just as real. Statistically, there is a high probability that any deviation from target—even of considerable size—will prove temporary. Attempts to respond immediately by shifting reserve availability and allowing the money market abruptly to tighten or ease could therefore easily result in whipsawing of the market. More confusion than light might be thrown on our intentions as short-term gyrations in open market operations obscured any more sustained strategy.

The problem is not a negligible one if one thinks in terms of a really substantial month-to-month smoothing. Since only a relatively small fraction of the impact of a given move in reserve availability or money market conditions is reflected in the behavior of the monetary aggregates in the short run, very large movements in reserves and money market conditions might be needed to correct short-term aberrations. Worse, the lagged effect of these moves might then have to be offset by even larger movements in the opposite direction in the subsequent period—a process that could easily lead to a serious disruption of the whole mechanism.

To take a recent example, it is not easy to contemplate what degree of money market tightness might have been needed to prevent the 15 percent rate of M1 growth that emerged this past April—or the implication of that degree of tightness for growth in subsequent months as lagged effects continued to be felt. Similarly, one wonders if the outright declines in M1 that have occurred in some individual months could have been prevented consistent with any positive federal funds rate or, alternatively, through any feasible injection of nonborrowed reserves within that month.

I recognize that few, if any, still seriously push the

need or practicality of keeping monetary growth rates on track month by month. The significance of these response lags comes in a somewhat longer run context. But the general proposition remains: There are risks in quickly adjusting our tactical sights, and risks in delay, when the aggregates move off course.

I know of no purely mechanical procedure to avoid these risks—to ensure just the right degree of responsiveness to deviations from targets. Whether and how much to respond will, I think, always be a difficult matter of judgment and won't be helped much by choice of tactical approach.

Obviously, the search for improved tactical techniques will and should go on. Perhaps the continuing effort to achieve better econometric models of the markets through which open market policy operates will help—although I must say frankly that the experience we have had does not encourage me to expect any startling breakthroughs. There may be alternative ways of formulating and presenting longer term targets that would improve upon present procedures. Even on the basis of what we know now, we need to consider carefully ways in which reserve targets could be more extensively used as part of our tactical procedures; indeed, the FOMC has done extensive work on this issue in recent years.

Limitations of monetary targets

As we immerse ourselves in these tactical questions, however, we need to realize the larger question is not tactical but substantive—how much weight to put on the monetary aggregates as opposed to other considerations. Concentration on the problems of chasing aggregate targets should not cause us to neglect their limitations.

I have already suggested that the normal relationships between the aggregates and the economy can break down over time horizons long enough to be highly significant for policy formulation. There are also times when market conditions may deserve attention in their own right. One thinks immediately of those occasions when markets are unusually disturbed to the point that a potential impact on business sentiment and financial availabilities cannot be ignored. At other times, relatively small changes in the apparent posture of the Federal Reserve may trigger undesired expectations in the market out of proportion to any presumed gain in tracking monetary targets. I think, too, we have seen plenty of evidence of the potential sensitivity of international financial markets to interest rate differentials—that floating exchange rates cannot by themselves eliminate that dimension of policy concern.

More broadly, I think the intellectual emphasis on monetary aggregates that developed through the 1960s

threatened to—and on some occasions did—go too far in implying that credit markets, broadly defined, “don't count”—that they are never or seldom a source of disturbance in the economy or a legitimate concern of policy. Indeed, I suspect the relatively little attention directed toward serious and systematic analysis of the role of credit markets, toward the financial complexities of the economy generally, and toward their disruptive potential is a common failing of most modern theorizing, regardless of the intellectual starting point.

We have had many occasions in the 1970s to pay the closest possible attention to particular financial problems and to the potential vulnerability of various credit markets. I would remind you of the recurrent concerns about thrift institutions and the mortgage market, Penn Central and commercial paper, Herstatt and the Euro-dollar market, New York City and the municipal bond market, and the rising level of commercial bank loan losses a year ago. Some of these situations had in them the potential for grave problems. Happily, they have been contained and dealt with through a variety of techniques, more or less of an ad hoc nature.

But is it sheer coincidence that so many of these problems have arisen in so short a period? And what is the present significance of such phenomena as the shifting proportions of debt and equity for the nature and strength of our recovery, for the vulnerability of the economy to inflation or to new shocks at home or abroad, and therefore for monetary and fiscal policy?

Perhaps answers to questions like these can be traced back in some ultimate sense to the behavior of money. But I doubt it: the explanation is much more likely to be found in other phenomena, including changes in social and economic attitudes stimulated by the earlier period of relatively stable prosperity.

I would go further and raise a question about the practical policy implications of the central policy theme of monetarism: that “inflation is always and everywhere a purely monetary phenomena.”

I do not want to be misunderstood. Central bankers, as custodians of a nation's money, commonly share the observation and intuition that pressures to increase the money supply to serve some presumed short-term objective are a basic source of inflationary pressure. Certainly, excessive monetary expansion is a sufficient condition for inflation, and in the longer run, it is equally clear that no important inflation can be sustained without money rising substantially faster than real income (taking into account trend velocity). There is always some rate of monetary growth (perhaps zero) that will in principle achieve price stability. But in the world in which we live, I don't think we can draw much comfort from those principles as a full explanation of where we are and a guide as to how to proceed.

Take, for instance, the period since inflation began to accelerate after the mid-1960s, with the rate reaching a peak during 1974 unprecedented for peacetime. Do we really have an adequate explanation of this development in terms of an acceleration in the rate of monetary expansion alone?

To be sure, there was in that period a faster rate of money growth. The two events were not unrelated. But as a technical matter, it is also true that as we got into the 1970s, the money relationships were not stable, so that monetarists did not succeed better than others in anticipating the full force of double digit inflation.

Plainly, even over a period of years, the relationship between money and inflation is complex and the statistical association rather loose. We do not need to look far to find other, and supplementary, explanations of price developments in the 1970s—the oil situation, some crop failures, the spread of unions into some new areas, and shortages in particular industries that ran up against capacity pressures before the economy as a whole reached full employment.

We can theorize that such developments affect only relative prices and need have no effect on the general price level if monetary growth is held steady. But the argument rests on the assumption of a highly flexible and quickly reacting price system. If to the contrary, relative price adjustments in circumstances like these are typically slow in coming and resisted, economists would agree that monetary growth at a noninflationary rate would depress the level of real activity. The question is which view is better according to observations of reality, and there seems to me a lot of evidence that it is the latter.

More generally, I think we have to ask ourselves about the nature of the economic, social, and political forces and attitudes that seem to have aggravated the difficulties of reconciling full employment with price stability.

It is hardly a satisfactory answer to say that central banks in principle can always resist inflationary pressures by simply refusing to provide enough money to finance them. Set against persistent expansionary pressures, aggressive wage demands, monopolistic or regulatory patterns that resist downward price adjustments, and other factors affecting cost levels, such an approach would threaten chronic conflict with goals of growth and employment that must rank among the most important national objectives. In a democracy, the risk would be not just the political life of a particular government, but the democratic way of government itself.

In this larger social and political setting, we should perhaps think of central banks themselves as "endogenous" to the system. A theory of chronic inflation

that points only to the money supply is not going to prove adequate to understand—or deal with—inflation in today's world. The danger is that it may discourage the search for particular remedies for particular problems.

There is no doubt in my mind that we must persist in finding an answer to our inflationary problems. We can take satisfaction in the progress of the past year. The current underlying rate of 6 percent or so is half that of 1974, and it has been maintained in a period of rather vigorous recovery. It feels better, and it is better.

But perhaps the greater test lies ahead. I hear from many directions the argument that individuals and institutions have pretty well adjusted to the current rate of inflation. Further progress, it is said, may be difficult without an unduly depressed economy. Perhaps, the argument goes, the better part of wisdom would be to live with the current rate rather than to try to reduce it further, aiming ultimately at the restoration of price stability.

Now, I recognize that it is possible to conceptualize about fully anticipated inflation being equivalent in its real effects to confidence in price stability. But I also question whether our institutions or individuals are in fact fully adjusted, or really can be expected to adjust, to the current rate of price increases or to any sizable rate of inflation. In any case, such an adjustment, once initially made, would not help us to deal with those forces that upset price equilibrium in the past. Indeed I suspect the job of dealing with these forces would be much more difficult, for the difference between a goal of, say, living with 6 percent or a goal of evolving toward stability seems to me profound from a psychological point of view. Willingness to settle for just so much inflation, but no more, would simply lack creditability with the public at large, or indeed, with policy makers themselves. Resistance to increases in the name of short-term advantages could only be weakened, and we would be off again. And I think we have learned enough to see that in those circumstances, even our employment goals will fall by the wayside.

My theme today is simple. As we look back over the evolution of thinking about monetary policy and macroeconomic policy generally over the postwar years, we can see the dangers of overly simple and overly confident views of the way the economic world works. Eventually, simple doctrine comes up against complex and harsh reality.

Back in the days when I was learning economics and central banking, the *General Theory* had cast fresh light on old problems. The intellectual contributions were immense. But popularized, bowdlerized, and pressed to extremes, it lost fashion for good reason.

The monetarists—emphasizing old truths in modern

clothing—have provided a large service in redressing the balance. It is in pressing the point to an extreme that the danger lies—the impression that only money matters and that a fixed rate of reserve expansion can answer most of the complicated problems of economic policy.

In a way, I suppose full confidence in a simple, unified view of economic policy is a comforting thing: a kind of security blanket in an uncertain world. But Alfred North Whitehead, in a different context, once

pointed to the danger: “There are no whole truths; all truths are half truths. It is trying to treat them as whole truths that plays the devil.”

He overstated the case. The practical man cut adrift from our sense of what is the greater truth—distinguishing, if you will, the one-eighth truths from the seven-eighths truths—will soon lose his way. But in assessing those truths, he can never afford to lose sight of the messy reality of the world in which we live.

Anthony M. Solomon
President, April 1980 to December 1984

Solomon held the office of president during a period of notably successful anti-inflationary monetary policy as well as rapid financial innovation and deregulation. In this speech, he discusses monetary strategy—in particular the targeting of monetary aggregates, interest rates, and nominal GNP—in light of trends in inflation and the uncertainties introduced by changing financial markets.

Unresolved Issues in Monetary Policy by Anthony M. Solomon

It is an honor and a pleasure to join the distinguished list of speakers who have appeared here in the George Eccles lecture series. The pleasure has to be especially pointed for a Federal Reserve official since George's brother, Marriner, was, of course, one of the great figures in our central banking history.

I want to talk today on the interrelated topics of inflation and the strategy of monetary policy in dealing with it. By the beginning of this decade, inflation had reached its highest peacetime level in American experience. This represented the culmination of an irregular upward movement of some 15 years' standing. The main task of monetary policy over the past four years or so has been to bring this inflation under control. Monetary policy has had no significant help from other types of policy in this fight. The climate has not been right for any type of incomes policy. And fiscal policy has not, to say the least, been of much help either!

George S. Eccles Distinguished Lecture, Utah State University, Logan, Utah, April 12, 1984.

We have nevertheless had a major success on the inflation front. As of 1983, most measures of prices and wages suggested that 15 years of acceleration have been reversed. Inflation last year was pushed back to the lowest levels since the mid-1960s. There has of course been some step-up from the extremely low rates prevailing right around the trough of the recession. This was inevitable. And some further acceleration is likely this year. Nevertheless, the basic situation is far better than it has been for a long time.

To be sure, the cost of this success, in the form of a deep recession, has been heavy. But that price has been paid and is behind us. We are obviously having a very good economic expansion and I think the prospects for its continuation are also good. Indeed, the principal worry at this point is that it may not have settled down yet to a sustainable rate.

In the meanwhile, the highly volatile interest rate environment that prevailed while inflation was being brought down seems to have disappeared over the last

year and a half. Interest rates have of course fluctuated, rising most recently. But the range of variation day to day, week to week, and quarter to quarter has been much narrower in the past year and a half than it was from late 1979 to late 1982.

Of course people worry as much about the average level of interest rates as about their volatility. And there is no denying that interest rates remain high in longer historical perspective. There are still some people, probably a minority by now, who lay the blame for high interest rates at the door of monetary policy. This complaint is unjustified. For one thing, despite the progress on inflation, the inflation premium in long-term rates remains exceptionally high. Some of the available evidence suggests that the long-term inflation expectations of financial market participants may be still as high as 6³/₄ percent as they look out over the next several years. These kinds of inflationary expectations are of course reflected in the yields on long-term debt instruments.

The skepticism that markets show about the future prospects for price stability reflects mainly two things. The first is our whole checkered history on inflation. The markets wonder if the inflationary experience we have had doesn't point to a basic weakness of modern industrial democracies in coping with this problem. But skepticism about our ability to deal with inflation has been greatly intensified by our problems with the federal budget. The level of anxiety about the deficit and its longer run implications for inflation has clearly heated up again in the markets this year. The fears of future inflation that are holding up interest rates will only come down, I am convinced, in the face of protracted experience with actual low inflation and with clear signs that the budget has come under control.

Obviously everybody would prefer a world with lower federal deficits and lower interest rates. But some seem to be suggesting that we can get the lower interest rates and their attendant blessings without progress on the fiscal front. The "solution" they seem to be proposing is much faster growth in money engineered by a more expansionary monetary policy. In my view, such an approach would be nothing short of calamitous. Such a policy would represent precisely the combination of budgetary disorder and monetary complicity that has produced most of the world's classic examples of runaway inflation. Instead, the solution to high interest rates has to come from the fiscal side. For monetary policy to abandon the approach that has made possible our progress on inflation would be a very sad mistake after all we have been through in the last few years.

Monetary targets and financial change

But while we can take satisfaction in the results of pol-

icy in calming inflation, the conceptual and strategic underpinnings of monetary policy have to some degree become less clear over the past two or three years. By the mid- to late 1970s, protracted experience with inflation had convinced the Federal Reserve and other central banks that we needed to find a way to refocus attention on the primary, indeed the only possible, longer run objective of central banks: stability in the value of money.

The result of the search for a new approach here and abroad was something new in central banking practice: annual growth rate targets for monetary and credit aggregates. The reasons for turning to this approach are straightforward. Thus it was clear when monetary targeting was first introduced — as it remains clear now — that control of inflation requires, as a necessary condition, slowing in money growth. There may be, and certainly are, many underlying causes for inflation. And there are many kinds of policies that may help in its control. But restoration of money growth rates to levels consistent with the economy's longer run capacity to produce is the essential monetary condition for reasonable price stability. Moreover, when the monetary targeting approach was adopted, there was a general belief that a reasonably stable relationship existed, at least over the intermediate to longer run, between money growth and nominal aggregate demand. So the long-run strategy was framed in terms of seeking steady but fairly gradual reduction in money growth rates to bring nominal demand into line with our real capacity to produce.

While inflation has indeed been brought down, the events of the last two or three years have somewhat undermined confidence in this formulation of monetary strategy. And indeed, actual monetary behavior has not been altogether consistent with it. The year-to-year path of monetary growth has not always followed the script of steady but gradual decline.

Implementation problems aside, the basic reasons for deliberate departure from this strategy are well-known. At root, they basically reflect the wave of financial innovation and deregulation affecting the markets for money and near money instruments we have been experiencing. Innovation and deregulation have been significantly changing the character of the money measures. The narrow money measure (M1) has been affected by the spread of NOW accounts, by the introduction of Super NOWs, and by other developments. The broad money measures, M2 and M3, have been radically transformed by the spread of the money market funds and by the virtually complete deregulation of time deposit interest rates that has proceeded in stages over the last several years.

The result of these developments has been changed

relationships between the money measures and the economy. One obvious sign of this change was the unusual weakness of velocity, especially of M1 velocity, during the recession and early recovery periods. The velocity of M1 showed an unusually sharp decline during the recession and a delayed and unusually weak rise during the early quarters of recovery.

Another sign of change is the much weakened response of the broader money measures to changes in interest rates. Over much of the postwar period, the cyclical performance of these measures was deeply affected by the rise and fall of interest rates above and below regulation-imposed ceilings on time deposit rates. Growth in the broader aggregates would be slowed sharply when market rates rose above the ceiling rates and would accelerate sharply when rates once again fell below these ceilings. These so-called "disintermediation" and "reintermediation" phenomena, once such a dominant feature of broad money growth patterns, have largely disappeared. Consequently, the recent behavior of these money measures has been far different from what would have been expected in the past under similar interest rate conditions.

Now it is possible that the departures from past norms in the behavior of the various money measures are purely transitional. In that case, we might expect a return to past patterns once the recent institutional changes have been fully absorbed. I think this is hardly likely in the case of the broader money measures, and I am skeptical even in the case of M1. But even if only a transition period is involved, it may be a long one. For one thing, further interest rate deregulation is due — under current law for regular NOW and savings accounts, and under proposed regulation, even for demand deposits. And just as important, it may take substantial experience with the new money measures as they evolve to get a firm sense of what has become "normal" once the transition has been completed.

So in continuing to use the framework of monetary targeting, we in the Federal Reserve have labored — and are laboring — under some difficulty. At the level of monetary strategy we have responded to these problems over the past year and one-half with some modifications in the settings of our target ranges, with some adjustments in the base periods to which the growth rate targets refer, and with some shifts in the relative importance attached to the various money measures. Moreover, in 1983 we added a monitoring range for a broad credit measure to the ranges for the money measures we target.

At the level of tactics, we have also made some modifications in our operating procedures. Thus the procedures adopted in October 1979 provided for some automatic response of interest rates to short-run move-

ments in the money measures, especially in M1, when these measures seemed to be deviating from their target paths. Under this approach, above-path money growth would automatically result in upward pressures on short-term rates. Similarly, below-path growth would tend to result in some easing of rates. The aim was of course to quickly set countervailing pressures in motion whenever money growth strayed from path. Not surprisingly, this approach added to short-run interest rate volatility. And with the apparent loosening of the relationship between the money measures and the economy in 1982, automatic responses to short-run movements in these measures no longer seemed appropriate. Consequently, since late 1982 we have been using a day-to-day approach that neither targets interest rates directly — as we did before October 1979 — nor causes them to respond automatically to short-run movements in money.

Alternative monetary policy frameworks

But despite the various modifications we have made, both in the targets themselves and in our tactical approach to hitting them, we have retained the basic framework of monetary target ranges in formulating our monetary strategy. The basic appeal of this approach remains. It is just as true now as it was when this approach was introduced that we need a procedure for focusing attention — both our own and the public's — on the long-run objective of reasonable price stability. And it is just as true now as before that price stability in the long run requires slowing money growth to rates compatible with our real growth potential. The problem is that the recent changes in the character of the money measures have increased the difficulties of translating this approach into concrete numerical ranges. The increased uncertainty about the economic results that can be expected from any given rate of money growth means that we shall continue to have to respond flexibly to emerging changes in the behavior of the money measures. And as we gain further experience, we may want to change the menu of measures we target or further adjust the weight we give to the different measures.

In particular, some have advocated that we give major weight not to any of the money measures, but to a broad measure of credit. The broad credit measures clearly have some advantages. They are pretty much immune to the recent innovation and deregulation problems that have affected the money measures. And their statistical relationship to GNP seems to be not demonstrably inferior to that of the money measures. Moreover, movements in the growth of the broad credit measures appear to be less volatile than that of the money measures. So this is a proposal that deserves

further consideration.

But the drawback of the broad credit measures is that they are little more directly controllable by the main instruments of monetary policy than is GNP itself. Indeed, they can be thought of as basically a somewhat imperfect proxy for nominal aggregate demand. So perhaps we need to confront the issue of nominal GNP targets for monetary policy head on. This is a concept that has been attracting increasing attention lately, and not just in this country. Interestingly, it is an idea that gets a lot of support from academics and from some journalists and congressmen. But in my experience, the response of central bankers, both here and abroad, tends to be less than enthusiastic.

The conceptual case for nominal GNP targets is easy enough to state. Monetary policy seeks over the longer run to provide reasonably stable nominal values. And nominal GNP, as a measure of nominal aggregate demand, has a more powerful and direct impact on nominal values generally than any of the intermediate financial measures, whether of money or credit. You don't have to worry about the velocity problem with nominal GNP targets, or about such related matters as innovation and deregulation in financial markets. And at least at a conceptual level, you could frame a long-run anti-inflationary strategy in terms of gradually declining growth in nominal GNP, ultimately to a rate in line with long-run real growth trends.

But the problems with nominal GNP are just as clear. The first is that the central bank cannot deliver on a GNP target. To be sure, it cannot deliver in any very direct way on some of the money and credit measures either — especially the broader ones. But the order of magnitude and nature of the control problem is different with respect to GNP. The financial magnitudes are at least determined in markets where central bank instruments impinge directly. GNP outcomes of course depend on policy levers not under the control of the central bank — most notably on fiscal policy — as well as on many things outside of policy control. Central bankers, understandably, do not want to be held to objectives on which they can't deliver.

But perhaps even more fundamentally, under our system of central bank independence, it is simply not appropriate for the Federal Reserve to set broad economic goals. That is the task of elected officials. The anomaly involved in the Federal Reserve setting broad goals for the economy would become even more painfully obvious if GNP targeting were to further evolve toward setting separate objectives for the price and real output components of GNP — and I am afraid such an evolution would be hard to resist.

However this latter problem were resolved, the tendency to set GNP goals chronically too high would be

very strong. Nobody would want to set forth a set of figures as a target that said, in effect: "If we don't get restraint on inflation, we're going to aim for subnormal or even negative real growth." And yet history suggests there may well be times when this kind of tough stance will be needed.

Finally, I think GNP targeting would risk the loss of longer run objectives in a futile chasing of short-term goals. We have to remember that monetary policy operates on GNP only with a lag. And these lags may be, as Milton Friedman has argued, "long and variable." If this quarter's GNP growth is below its target path, the temptation would be to push on the gas pedal hard enough to get quick and visible results. In fact, the outcome is likely to be overshooting and instability.

So to me, it is far better for our central bank to seek a general financial environment compatible with long-run objectives for financial and monetary stability than to be loaded down with the impossible task of seeking to hit specific economic outcomes on a year-by-year basis.

Of course this doesn't mean we don't have to keep an eye on the actual performance of the economy as we go about our business. The need for explicit attention to ongoing developments in the economy is exactly the lesson taught by our recent problems with velocity. But I believe formal GNP targets — whether determined by the Federal Reserve itself or imposed on it by the Congress — could ultimately undermine the institutional conditions in which an overall climate of monetary stability is possible.

Let me be a bit more specific about what I think we have to do in the circumstances in which we find ourselves. First, we should continue to set and use money and credit target ranges, but only with a willingness to make adjustments in them whenever we see our expectations about their "normal" behavior going awry. Obviously I am no fan of making the policy levers respond automatically to short-run developments in the aggregates. But longer run deviations from target, when the targets themselves continue to seem valid, clearly do require a response.

Second, interest rates are obviously very important, both operationally and in the way we think about our impact on the economy. But even granting the problems with the monetary aggregates, interest rate objectives are just no way to structure monetary policy. We simply don't know at all what interest rates will prove to be appropriate under given circumstances. The recent ability of the economy to rebound vigorously while rates have remained historically high is clear evidence of this.

Third, the one place where interest rates may help us in formulating long-run monetary strategy is, I think, in

the valid general rule that short-term interest rates should normally be above the current inflation rate. In other words, real short-term rates should be positive. When they are not, as was often the case in the 1970s, the result is almost certainly going to be inflationary since credit demands are sure to explode. On the other side, however, I do not think we can state an appropriate upper bound for real interest rates. In normal times, with a budget that is in rough balance, historical experience may be a reasonably good guide. But under present conditions, it almost certainly is not.

Fourth, as I have already said, I do not think formal GNP targets are helpful, but I do think we have to keep our eyes on the economy. Indeed, under current conditions, the performance of the economy has to be a matter of first-rank importance. Experience has shown us that we can't have enough confidence in the aggregates to focus on them alone, blind to all other considerations.

Finally—and on this I may depart from some of my colleagues—I think we have to pay more attention to the international implications of domestic monetary policy. We are only beginning to grasp in this country the implications of the foreign sector—of the trade and exchange rates—for our domestic real growth, our financial markets, and our inflation performance. In other countries, the trade and exchange rate implications of any and all monetary policy decisions are likely to get prime attention. In this country, international considerations have most of the time been put in a separate compartment labeled "exchange market intervention." We can't afford this kind of thinking anymore. Domestic monetary policy has a far more powerful influence on exchange rates and the international economy generally than does exchange rate intervention when its potential money supply effects are sterilized. This is certainly true at the present highly restricted scale of intervention, and it may well be true at any practical level of intervention.

Inflation prospects and anti-inflation policies

Overall, the approach to monetary strategy we take should provide the needed degree of longer run discipline. Money and credit targets can continue to fill that role, as long as appropriate allowance is made for their changing characteristics when and as these emerge. More generally, I think there is an increasing and unfortunate tendency to think that the problem of creating a reasonably noninflationary world is mainly a problem of devising the right kind of monetary strategy. The proponents of monetary rules—whether of strict monetary targeting or of some mechanical response to changes in the price of gold or of some commodity price index—seem to think our problems with inflation

are mainly technical. They are not. They are rooted in major structural features of our modern world, both economic and political. These features tend to make policies that will ultimately prove inflationary attractive in the short run. On the other side, inflation, once begun, is very expensive to bring under control—as we have certainly seen.

A basic feature of our economy is that most prices and wages respond only sluggishly to changing demand conditions. So when monetary policy is used to slow aggregate demand, the main initial response is not slower prices and wages, but reduced output and employment. The improvement on prices comes only later, and only after real activity has been slowed. Under these conditions, slowing inflation always imposes a cost, temporary but sometimes heavy. Much of the public discussion of the inflation problem, at least until fairly recently, gave proper emphasis to ways of changing the economic structure to reduce the cost of using aggregate demand policies to contain inflation.

Some ideas on how to do this have been around for a long time—and are no less valid for that reason. Some involve removing government impediments to the ability of prices to respond promptly to restraint on aggregate demand. Others seek to improve the functioning of the labor market so that wages also respond more flexibly and so that we can operate the economy at lower unemployment rates without risking inflationary pressures. We have made a little progress on some of these things. Rate deregulation in some industries is an example. But there would have to be a large number of such changes to produce a really significant improvement in the performance of our pricing mechanism. And implementation of these changes often involves disturbing vested interests. So it is sometimes easy to get discouraged about the feasibility of implementing enough of these ideas to have a significant impact.

Other ideas for reducing the cost of keeping inflation under control are newer: One such idea is the suggestion that wage inflation could be made less impervious to demand restraint if multiyear wage contracts that lock in past high inflation rates were eliminated. Another idea would tie wage increases more directly to demand conditions by having some part of them take the form of profit sharing. These ideas definitely deserve a hearing. They offer the prospect that aggregate demand policy could slow wage inflation with much less impact on employment than it has now. A number of recent wage agreements have in fact incorporated some element of profit sharing. But at the level of public policy, the climate doesn't seem at all conducive at the moment to a major reexamination of our wage and price practices. Perhaps that will continue to be the

case as long as inflation remains under reasonably good control.

As I suggested earlier, some acceleration of inflation during economic recovery from recession lows is inevitable. The problem during the late 1960s and 1970s was that each inflation peak was higher than the one before it. Our task is to reverse that overall trend. When we do take the longer view, there is clearly one large negative in the prospects for further progress on inflation over the next few years; the federal deficit. And make no mistake about it, this is going to be a very serious negative indeed if the problem is not addressed vigorously and promptly.

But the deficit aside, there may also be some good things going for us on the longer run inflation outlook. Demographics, plus the fact that much of the absorption of women into the labor force is behind us, means that we will have a more experienced workforce. This means, in turn, that the unemployment rate at which inflation tends to accelerate is likely to drop from the levels that have proved to cause problems in the past decade or so.

Moreover, partly because of these changes in the characteristics of the workforce and partly for other reasons, we seem likely to get an improvement on the very slow productivity growth we suffered in the 1970s. Indeed, at least some students of this problem think we could approach the rapid growth we enjoyed for substantial stretches earlier in the postwar period. Any improvement on productivity would help the inflation

problem. It would permit us to run the economy at higher operating rates without risks of overheating. It would also help to satisfy workers' desires for rising living standards without the need to press for inflationary wage increases.

Finally, it is clear that some significant fraction of the inflation of the 1970s reflected the two oil shocks, one triggered in 1973 by a realignment of power within the oil industry, the second by the Iranian Revolution in 1979. A little luck in avoiding repeats of such shocks would be a major help on the inflation front in the years ahead.

With luck—and it will take some of that plus a resolution of the deficit problem—inflation, nominal GNP growth, and interest rates could settle down to much lower average levels and narrower ranges of variation than we have seen in recent years. If this does happen, the technical issues and problems of monetary policy that have so bedeviled us recently will seem less pressing. After all, earlier in the postwar period, monetary policy was a relatively simple business of “leaning against the wind,” and money and credit growth rates were in fact a lot lower and more stable than they have been in the past 10 or 15 years.

Not that the risks of resurging inflation will ever entirely disappear. Like so many problems of the modern world, the risk of reigniting inflation is something we will have to learn to live with on a year-by-year basis. But I am optimistic that our prospects are brighter than they have been for some time, and that is perhaps reason enough for satisfaction.

E. Gerald Corrigan
President, January 1985 to present

In this speech, made shortly after the stock market crash of October 1987, President Corrigan identifies imbalances in the U.S. and the world economy that contributed to financial market instability. He emphasizes that the reduction of U.S. federal budget deficits and the removal of barriers to international trade are prerequisites for adjustment, and he ends by drawing some implications for the supervision of financial markets.

Securing a More Balanced Global Economy

by E. Gerald Corrigan

Good afternoon, ladies and gentlemen; it is a pleasure for me to have this opportunity to address the Canadian Club of Toronto.

I think you will all understand that this is not the easiest of times for a central banker to be making public appearances; indeed, there is an old adage that central bankers should be seen and not heard. In these turbulent days I am inclined to the view that we should be neither seen *nor* heard. Since that is not a practical alternative, the next best thing is to be careful and measured in what we do and in what we say. Consistent with that, let me say right at the outset that I will have absolutely nothing to say this afternoon about possible near-term changes in interest rates, exchange rates, or stock prices! However, I do want to take this opportunity to provide something of a broad overview of the economic challenges that lie ahead—with partic-

Address delivered before the Canadian Club of Toronto, Toronto, Canada, November 16, 1987.

ular emphasis on the adjustments which must take place over time if we are to succeed in restoring better balance in the U.S. and the world economy.

Having said that, obviously I cannot ignore the recent period of unprecedented volatility in financial markets around the world. In the wake of these developments, there is a natural and appropriate desire to better understand what happened, why it happened, and what it implies for the future. I would not be so foolish to try to answer any of those questions at this time. I say that in part because meaningful answers will come only after the dust settles and only with the benefit of the perspective that will come with the passage of time. However, it is important that we learn all we can about exactly what happened on Monday, October 19, when the Dow fell by 500 points, including the answers to such questions as whether programmed trading or highly leveraged positions in stock futures and options played an important role in unleashing those events or

in aggravating them once the initial downward momentum developed. But to cite just one example of perspective, let us also keep in mind that stock prices in countries other than the United States where those particular institutional arrangements are far less important than they are in the United States have fallen by even greater amounts than the drop in the United States.

Let us also keep in mind that when we look carefully at the period between late August, when the Dow peaked at about 2700, and mid-October, when the Dow had reached its recent low of just above 1700, it is not easy to conclude that there was any one event or even any combination of events that can satisfactorily explain all that has happened over that interval. To be sure, from a U.S. perspective the dollar was under pressure in the exchange markets; interest rates, especially long-term rates, had risen; inflationary expectations were building; and there were signs of strains in the process of international economic policy coordination. While these developments were disturbing, individually or collectively, it is not clear that they should have been decisive, especially since over this same period economic performance was, in several crucial respects, better than earlier expectations. The U.S. budget deficit for fiscal 1987 turned out to be smaller than even the most optimistic expectations; spurred importantly by growth in exports, economic activity in the United States—including in the manufacturing sector—was stronger than expected; growth prospects abroad were no worse than earlier and, in the case of Japan, were actually better; and developments on the inflation front—while warranting careful and continuing vigilance—were in no way indicative of a significant outburst of inflation.

In short, as hard as we may look, it is by no means clear to me that we will find in these recent weeks a smoking gun or guns that can explain why stock prices plummeted so sharply and so abruptly in the United States and around the world. Let us also not lose sight of the fact that stock prices in the United States and elsewhere had reached historic heights in both absolute and relative terms in this general time frame. Indeed, the rise in stock prices during 1987 was such that even now stock prices in the United States are above their year-end 1986 levels.

Imbalances in the U.S. and the world economy

What I am suggesting, of course, is that the underlying causes of the recent financial market disturbances are not to be found in the events of the past several weeks or months but rather in the cumulative weight of events over a much longer time frame. Looked at in that light, it seems to me that the important conclusion to be

drawn from recent experience is that the financial markets are sending us a message, and that message is in the form of a warning that despite a long period of satisfactory, if not quite extraordinary, economic performance, there are serious imbalances in the United States and world economy that simply must be remedied and remedied without further delay. Indeed, to the extent recent market developments have been fueled by any one thing, that thing may have been a growing doubt as to whether the policy process—domestically and internationally—was capable of mounting the necessary policy initiatives to deal with a series of problems which were certainly not new.

While the nature of these problems is not new, allow me as a matter of emphasis to cite several examples of things that from a U.S. perspective lie at the heart of our difficulties:

- In the late 1970s, general government budget deficits in the United States consumed, on average, only about 10 percent of our net private domestic savings. By 1986, and despite large surpluses in state and local governments, overall government deficits were consuming almost two-thirds of net private domestic savings, with the federal deficit eating up an astonishing 90 percent of net private savings. While these figures have come down somewhat this year, they remain far, far too high by any reasonable standard.
- As recently as 1981, the United States was the world's largest net creditor nation. We are now its largest net debtor and sometime in 1988 our net external indebtedness will cross the \$500 billion threshold. To put it differently, by the end of 1988 our net external indebtedness will reach or exceed the accumulated public debt of the United States from its inception through 1974.
- Since the last quarter of 1983, nonfinancial corporate America has retired a cumulative total of \$270 billion in equity while over the same interval corporate debt has increased by a staggering \$600 billion.
- On a global basis, the U.S. trade and current account deficits, and their mirror-image surpluses in several of our major trading partners, are of unsustainable proportions.

These examples reflect the harsh reality that for too long we in the United States have been borrowing more than we save and consuming more than we produce in an environment in which debt, deficits, and leveraging have become a way of life for government, for business, and for individuals. Fortunately, we have both the underlying economic strength and the oppor-

tunity to remedy these problems—but only if we heed the warnings of the recent past and get on with the task now.

Yet, as we approach that task we must be realistic. There are no quick fixes; for example, we in the United States must recognize that for a period of time our standard of living must rise at a slower rate than would otherwise be the case. We must also be realistic in our expectations; for example, we can all look back with fondness at the interest rate environment of the 1950s and early 1960s and wish that we could quickly and easily return to such a tranquil setting. The reality, however, is that no country with our recent track record of debt, deficits, and inflation should expect such a result to emerge quickly or painlessly. Finally, let us also remain mindful of the risks and dangers on all sides. For example, there can be no doubt that the exchange rate is a crucially important variable in the current setting, but just as there are dangers with an exchange rate that is too high, there are dangers with one that is too low. Indeed, at the end of the day, there is no exchange rate which, unto itself, can solve our current problems in an orderly way.

Policy initiatives

All of that is simply a long-winded way of saying that imbalances in the U.S. economy are an important contributing force to the imbalances we see in the world economy. But the existence of these problems in the U.S. economy does not mean that the burden of adjustment lies exclusively with the United States. To the contrary, any realistic appraisal of the current situation must recognize that directly or indirectly the rest of the world has been the beneficiary of the U.S. trade deficit as output, employment, and income growth elsewhere have been supported by consumption in the United States. In other words, adjustment in the United States of necessity implies adjustment elsewhere and especially in the large surplus countries. There is no mystery to that. Nor is there any mystery in the kinds of policy initiatives that are needed to produce the necessary adjustments. Those essential policy initiatives including the following:

- We in the United States must sharply reduce and, in a relatively short period of time, eliminate our domestic savings gap. That domestic savings gap is the difference, relative to GNP, between our net domestic savings and the claims on those savings stemming from the combination of financing private investment and financing the government's deficits. In recent quarters, that savings gap has been averaging well in excess of \$100 billion, or more than 3 percent of GNP. Looked at in that light, the prob-

lem with the U.S. budget deficit is not so much its size relative to GNP but rather its size relative to domestic savings.

However, there are only three ways our savings gap can be eliminated: first, by reducing private investment which, if anything, is already too low; second, by increasing net domestic savings which, while desirable over time, simply does not seem to be in the cards in sufficient time or amounts to produce the needed result in an orderly way; and third, by reducing the financing needs of the government.

As a practical matter, cutting the budget deficit is the only real choice we have, and even that is not really a choice but is rather a question of whether this generation pays the freight for failing to act or whether we will pass that burden on to future generations. The equivalent of a macroeconomic free lunch, like other free lunches, simply does not exist.

One silver lining behind the cloud of recent market developments appears to be an encouraging and bipartisan willingness on the part of the political leadership in the United States to mount a fresh and vigorous attack on the budget deficit. To the extent that effort can produce a credible program of deficit reduction which, as an illustration, could roughly eliminate the domestic savings gap in an intermediate time frame, the consequences for markets and for the economic outlook should be constructive.

- We in the United States must also accept, for a period of time, a slower rise in our standard of living than would otherwise be the case. By that I mean, of course, that the rate at which the U.S. economy consumes goods and services must slow in absolute terms and in relation to GNP. To put it in slightly different terms, if real GNP growth were to average 3 percent over the next several years—a result I would consider quite satisfactory—the *only* way net exports can rise is if domestic demand is growing at a slower rate than GNP itself.

It would be nice to think we could have a sufficiently high growth in GNP to accommodate both a rise in net exports and a rate of growth in domestic demand commensurate with historical experience. Unfortunately, it is most unlikely that such a result could emerge without running grave and, in my judgment, wholly unacceptable, risks of renewed inflationary momentum. Indeed, when one takes account of the fact that the bulk of the external adjustment in the U.S. trade deficit must come via higher exports and lower imports of manufactured

goods, there are inflationary risks inherent in even the most optimal pattern of adjustment.

- Adjustment in the United States is crucial but it must be supported by complementary developments in other countries, especially in those industrialized and newly industrialized countries that have large trade and payment surpluses. That requires that those countries must go through a period in which their domestic demand increases faster than their GNPs even as GNP growth rates are maintained at otherwise satisfactory rates. To some extent, the process is already taking hold, especially in Japan. However, without singling out any one country, a question naturally arises as to whether this process could not be further strengthened by additional stimulus—especially on the fiscal side. Indeed, in a context in which fiscal stimulus is being reduced in the United States, the case for some increased fiscal stimulus elsewhere has natural appeal. This is especially so since there are ways in which *temporary* moves on the fiscal side—which need not jeopardize longer term objectives of budget discipline and price stability—can be very helpful in the *transition* to more balanced growth in the world economy.
- The other remaining major link in this chain of needed policy initiatives is in the area of trade policy. Protectionism is simply not the answer to our economic woes. History tells us that in a blunt fashion. But just as we must strongly resist protectionist pressures in the United States, other countries must move decisively in opening their markets to imports, including imports from the United States. The recent dramatic gains in productivity in the U.S. manufacturing sector and the not unrelated surge in U.S. exports of manufactured goods suggest that U.S. firms can compete in world markets, especially in a setting in which artificial barriers to imports are being reduced around the world.

A more open and market-driven world trading system is what we want and what we need. In that regard, the bilateral efforts between Canada and the United States to adopt a major liberalization of trading arrangements between our two countries can serve as a model to the rest of the world. I recognize, of course, that final adoption of that trade pact faces obstacles on both sides, but I sincerely hope we can quickly get on with the process of ratification, not just because it would be beneficial to both our countries but also because of the message it sends to the rest of the world.

To summarize, the nature of the imbalances in the United States and the world economy is well known.

More importantly, there now seems to be a widening consensus in the United States and elsewhere as to the kinds of policy initiatives that can remedy these imbalances in an orderly way. To the extent that assessment is accurate—and I certainly believe it is—the prospects for the world economy are brighter indeed. However, the clock is also ticking; delay and procrastination in getting on with the execution of the necessary policies carry with them the clear and present danger of slippage in both economic performance and prospects. The benefits from cooperative and concerted actions are clear, but so too are the costs of inaction.

Structure and behavior of financial markets

At the risk of exhausting your patience, allow me to close with a few remarks about the implications of recent events for the structure and behavior of our financial markets and institutions. It is possible to look at the recent period of turmoil in financial markets and observe that those markets and institutions performed remarkably well under enormous strain. In one sense that is obviously true. But however true it may be, I think it would be a serious mistake to have passed through this episode and not to have learned from it. In that regard, let me briefly mention a couple of things that stand out in my mind:

- First, the financial wizardry that has been so much in vogue in recent years carries with it new and often very complex elements of risk to market participants and institutions alike. Long periods of bull markets tend to bring about a subtle but certain relaxation of standards of caution and prudence if not a tendency, at least for a few, to allow greed to be substituted for common sense. When those tendencies are coupled with technologically-driven innovations in the financial marketplace that dramatically increase the speed, volume, and complexity of transactions, new elements of risk and volatility can come into play.
- Efforts aimed at reform of national banking and financial market systems—such as those well under way here in Canada—should not be postponed or delayed. The case for progressive reform is still there but so too is the case for insisting that the process of reform be accompanied by appropriately strong supervisory arrangements.
- The global character of financial markets has been a reality for some time. But it seems to me that recent events have demonstrated just how closely intertwined those markets have become. That reality carries with it the clear and pressing need to achieve a much higher degree of harmony among nations with regard to the supervision of banking

and capital market activities. On the banking side, the G-10 central banks are well advanced in efforts to arrive at a common multilateral approach to bank capital adequacy standards for internationally active banking organizations. Hopefully, that effort can be completed in the near term since it would constitute a very important step forward in international cooperation that would make sense both on competitive and prudential grounds. But as important as it is, it is only a beginning in the larger task of seeking to adapt national standards of banking and capital market practices and supervision to what are clearly international markets.

To summarize, the current economic and financial situation in the United States and around the world

should be a matter of concern to all of us. But our fate is in our own hands. We have the tools, the knowledge, and the underlying strength to forge the necessary adjustments that can permit a return to a more balanced and sustainable pattern of economic performance. That opportunity has not been lost; to the contrary, recent events may well have worked in the direction of enhancing prospects that the needed policy initiatives—nationally and internationally—will be forthcoming. Indeed, even before recent market developments, important initial elements of that transition were beginning to take hold. Building on those developments and with a renewed sense of purpose, I believe we can seize this opportunity and cooperatively manage our way through this transition in a manner that will yield a more secure and more stable future for all.

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