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Paper given before
The American Statistical Association
122nd National Convention
Minneapolis
Sunday, September 9, 1962

*Pub-1
X - Gen - 1 - 8*

CENTRAL BANKING AND ECONOMIC GROWTH

"An efficient monetary mechanism is indispensable to the steady development of the nation's resources and a rising standard of living. The function of the Federal Reserve System is to foster a flow of credit and money that will facilitate orderly economic growth and a stable dollar."^{1/}

"Monetary policy has an important contribution to make toward faster growth, but only as one part of a broader public program for growth that would include tax measures, expenditures, and debt management as well as monetary measures.....The monetary contribution would be to exert a stabilizing influence on demand and prices; the initiating force in shifting output structure is most appropriately sought in other public agencies and in the private economy."^{2/}

The above quotations make it obvious that the Federal Reserve System regards economic growth as a primary objective of central banking. They also make clear, however, that economic growth is one objective, or perhaps it is more accurate to say that it is a qualified objective (e.g., "orderly economic growth and a stable dollar"), that central banking contributes to growth through its stabilization efforts and its underwriting of money and credit flows (e.g., "foster a flow of money and credit that will facilitate" and "exert a stabilizing influence on demand and prices") and that central banking's contribution is but one part of a growth program and not an important initiating force in such a program.

^{1/} The Federal Reserve System - Purposes and Functions, Fourth Edition, Washington, D.C., 1961, p. 1

^{2/} Answers of the Board of Governors to Questions of the Commission on Money and Credit, Question III, pp. 2-3; mimeographed document, 1960. To be published as part of the documentary papers of the Commission on Money and Credit

My purpose in citing these quotations and underlining certain phrases is to put the role of monetary policy with respect to economic growth into proper perspective. The direct contribution of central banking to growth is pervasive but general and lies mainly in the creation and maintenance of a money and credit climate in which growth can occur rather than in specific stimulants to growth. It is significant, I believe, that Denison's recent book^{3/} on growth lists in its last chapter 31 specific actions to increase our growth rate, but that not one of them is a specific action in the field of central banking, that only one is specific with respect to fiscal policy and it calls for a tax structure neutral with respect to resource allocation, and that only two or three have any connection with either money or fiscal policy actions.

Denison does note that greater success in minimizing the amplitude and duration of recessions would be favorable to capital formation and growth^{4/} and states, "We can be fairly certain that periods in which investment demand is excessive and inflationary pressures arise will alternate with periods in which investment is insufficient to absorb the saving that would be undertaken at high employment-income levels. . . . We need a policy that will be appropriate to whatever develops."^{5/} He also says that monetary policies resulting in lower interest rates, greater ease of borrowing and larger holdings of liquid assets by business will stimulate investment.^{6/} In general, however, his treatment of monetary policy (and for that matter, fiscal policy) is casual and in keeping with the general point evidenced in the first quotations cited; it is important but general and pervasive in effect. In other words, I might summarize by saying that bad monetary policy probably will inhibit growth but good monetary policy will not guarantee

^{3/} Denison, E.F., The Sources of Economic Growth in the United States and the Alternatives Before Us, Committee for Economic Development, New York, 1962.

^{4/} Ibid., p. 135

^{5/} Ibid., p. 134

^{6/} Ibid., p. 129

growth. Good monetary policy is important, perhaps vital, to growth, but the initiating forces for growth are found in other areas.

Having, I hope, put monetary policy into perspective with respect to economic growth, I pass to some general observations as to the character of monetary policy. Most central bankers, I believe, would state that monetary policy is a pragmatic art rather than a precise science. Despite the work done over a long time, no single monetary theory provides clear and unequivocal guidance for monetary policy under all circumstances of time, place, and institutional characteristics of the economy.

This should not be taken to mean that there is no conceptual framework for monetary policy. Over the long pull, if we are to have high employment and a growing economy operating at or about at its current capacity, the required rate of real investment must be matched by a flow of real saving. This is true because economic resources are scarce and in a capacity operation resources going for investment purposes have to be taken from consumption purposes and saving represents withholding of spending from consumption.

Created money or credit, then, can be no more than a relatively short-run substitute for saving in financing investment. It can bridge temporarily gaps between the flow of current saving and needed investment when real resources are available because the economy is operating below capacity. It can aid in smoothing the resource allocation process even under an economy operating at capacity. Moreover, a growing economy needs an expanding supply of money and credit. It should not grow too fast for the economy to absorb, nor too slowly to fulfill its functions, and the amount of money which is appropriate seems to be influenced by the general level of liquid assets.

Actually, of course, the fact that central banking is more art than science hardly makes it unique in the field of economic, political, or social policy. And the fact that precise determination of the effects of credit cost versus credit availability, of changes in the money supply versus changes in liquidity and velocity, is not possible does not mean that the general linkage between monetary policy action and economic response is impossible to discern. Quite obviously, central banking action affects bank reserves; such reserves form the basis of the money supply and underpin commercial bank loans and investments; changes in these affect spending and saving. Questions of "how much", "how fast" and so on can be answered reasonably well at a particular point in time - they merely are not, yet at least, susceptible to formula treatment.

The role of interest rates in the conceptual framework of central banking is complex. Basically interest rates reflect the interplay of demand-supply forces in the saving-investment process and may be regarded more as an essential allocation factor in the market than as a deliberate goal of monetary policy. It is obvious, however, that monetary policy affects the supply function and hence influences the level and pattern of interest rates. I have mentioned that Denison states that monetary policy can aid growth by producing lower interest rates. A fundamentally contrary view is expressed by Benjamin Eiriksson of the Iceland Bank of Development who argues that money is an economic agent which provides the service of synchronization through its store of value quality. As such it receives interest in payment for its service.^{7/} It would follow that policies which would lead to interest rate changes would have to consider their effect on both saver and investor, both lender and borrower. Thus if interest rates are to be viewed as an objective of policy, neither high nor low rates are desirable or

^{7/} Eiriksson, Benjamin, The Concept and Nature of Money, Reykjavik, 1962.

attainable at all times. In general rates should be low enough to stimulate investment when needed and high enough to stimulate saving when needed, as well as flexible enough to serve the resource allocation function.

The above discussion leads naturally back to the objectives of central banking which I view as falling into three broad classes - ultimate, intermediate, and proximate. This paper opened with quotations concerning the ultimate objectives of central banking since they naturally are those most closely related to monetary policy's contribution to growth. They may be restated here as high employment and production, a rising standard of living and stable values.

Three comments may be made about these ultimate objectives. First is the fact that monetary policy formulation and execution is a continuous process, and continuous review of developments provides the basis for continuous consideration of policy. The processes and procedures through which policy is executed in the short run are and have to be far more definite and precise than the broad goals but always have to be associated with them.

Second is the question of direct linkage between specific policy action and ultimate economic response. No one can say with certainty that specific central banking action leads to ultimate economic response in precisely such a way or such an amount. The drive shaft between central banking action and ultimate goal is too long and is linked to too many gears of indeterminate speed. Nor can anyone state with precision what would have happened absent the central bank action or with a different action. But at a given point in time the indicated direction of central bank action is fairly clear, and the continuous review process makes it possible to change the speed and pressure of such action as the course of developments in the ultimate goals is observed.

Third is the point that the ultimate goals may not always be compatible. In one sense, this is true; in another sense it is completely misleading. When we deal with politico-socio-economic affairs, we almost always have conflicts. The strength of a dynamic and democratic system lies in its ability to make adjustments that permit optimum attainment of the goals of a free society. So to say that the ultimate goals of central banking may not be compatible is to state the obvious but without any understanding of our society.

Ideally, we want to attain all of the ultimate goals, and no one is more important than another, nor are they separable in the long run. In the short run, lack of compatibility may exist quite often but also quite often does not exist at all. For example, at the moment, policy emphasis naturally is colored by relatively high unemployment levels rather than by preoccupation with rising prices, because the former exists and the latter is absent.

From the ultimate objectives it is useful to move all the way back to consider the proximate objectives - those most directly controlled or influenced by the central bank. In this category I put bank reserves and, in a qualified sense, interest rates.^{8/} There is no real question about practical control over reserve volume by a central bank. Differences between countries in law and custom and variations in technique lead to differences in degree of control but for the purposes of this paper those differences are not significant. It is, I believe, inaccurate to speak of central bank "control" over interest rates in most countries but, as noted earlier, there certainly is central bank influence in this area.

^{8/} In this paper there is no point to consider differences in degree of control over total reserves, nonborrowed reserves, and free reserves in the United States, nor differences in degree of influence over short, intermediate, and long term interest rates.

I must resolve the apparent contradiction of listing interest rates as a proximate objective of monetary policy after stating earlier that they are to be regarded more as an essential allocation factor than as a deliberate goal. In my view a central bank should not, and indeed cannot for long, impose an arbitrary, non-market determined level or pattern of rates, nor attempt to peg such a pattern. Obviously, however, central bank reserve policy influences rates and must implicitly have some interest rate goals in mind. These goals do not stand alone, however; they are conditioned by reserve volume objectives. Thus, without attempting to impose the central bank's view of an appropriate rate structure upon the money and credit markets, proper central bank policy may well have a view as to what interest rates will result from additions to or subtractions from reserves and therefore may use short-term rates and the general rate pattern as goals along with the reserve volume goal. Furthermore, it may be quite appropriate central bank action to pursue an interest rate goal somewhat more diligently than a reserve volume goal at a particular conjuncture of circumstances.

The intermediate objectives lie roughly halfway between proximate and ultimate objectives and have to do with spending and consumption, saving and investment and thus include credit volume, money supply and the liquidity of the banking system and the general economy.

The linkage between central bank policy actions, the response of those factors in the proximate objective area, and the secondary response of the factors in the intermediate objective area are seen with reasonable clarity. Strictly speaking, central bank control over intermediate objectives does not exist, but practically central bank influence does, even though the degree of influence varies with time, place, and circumstance and is not precise nor definite.

While the linkage between proximate and intermediate objectives is not precise and definite, it is far more so than the linkage between intermediate and

ultimate. Central bank policy strongly influences total bank deposits and bank loans and investments. Its influence is somewhat less definite on the conventional money supply and general liquidity but is apparent. When funds flow into ultimate particular uses, however, they are beyond central bank control.

We may summarize the discussion so far as follows: Economic growth is a primary objective of central banking policy but one that is qualified by terms such as "orderly" or "sustainable". Central banking's contribution to growth takes the form of providing a suitable money and credit climate in which growth can occur and involves stabilization functions and the fostering of an adequate but not excessive flow of money and credit for the economy. Proximate objectives are set in terms of reserve volume and, to a degree, interest rates. These influence credit volume, money supply and liquidity which affect saving and spending which react on production, employment, income and prices. Since the links between proximate, intermediate and ultimate objectives are not determinate in precise terms, central banking operates through a process of continuous review and relies heavily on judgment.

At this point, I wish to move from hypothesis and concept to experience and empirical analysis. In so doing I raise three questions and suggest answers to them.

1. How does the record of the United States in economic growth compare with that of other nations?
2. Does experience indicate that monetary policy can and does contribute to growth?
3. Does the record of monetary policy in the United States indicate that it has been appropriately conceived and timed in terms of contributing to growth within the conceptual framework outlined?

In an annex to this paper a series of tables and charts present data pertinent to the answers to these questions. In essence the data tell their story without the need for comment but I propose to comment in some detail on the tables and more briefly on the charts.

The five tables, A-I through A-V, present various data for nine countries. Four of these countries are Common Market members whose growth performance in the 1950's has been very impressive and which often are cited as examples for the United States to study in its pursuit of higher growth rates. Also included are two rapidly growing Asian countries: Japan, the foremost industrialized state in Asia, and Taiwan, an underdeveloped nation with a very high growth rate. The United Kingdom is on the list; it has shown a lagging growth rate but is one of the two great reserve currency nations of the world, as well as a great industrial power. The United States and Canada complete the list, the former for obvious reasons, the latter as a well-developed Western Hemisphere state which has undergone a financial crisis.

This list of countries is designed to be illustrative rather than exhaustive, although I do not believe that large scale extension of the list would make the points illustrated much, if any, more definitive. The countries shown represent mostly the highly developed industrial states and their experience can be most easily and exactly compared with that of the United States. I have included Taiwan as a special case, almost an extreme. It is a nation with no significant natural resource base but one which through unusual circumstance has an extraordinary supply of educated and managerial talent and which has been able to largely ignore (although it is certainly aware of) balance of payments problems because of massive injections of United States aid.

Tables A-I and A-II show data on industrial production and real gross national product per capita for selected years. For the purposes of this paper, growth is measured by real gross product and industrial output performance. I

recognize that many people believe this is too narrow a concept because it tends to ignore, or at least underweight, general economic progress and welfare. Comparisons are difficult enough, however, when done on the gross product or industrial output basis and the use of such data does serve to insure against overstating developments in the United States relative to those in other nations.

The reason for selection of the years for which data are given is quite obvious. 1938 is the last year preceding World War II. I do not represent it as a "normal" year, but it was a year of peace even though in Germany and Japan much industrial effort was going into war production. 1948 is taken as the beginning of the postwar boom. Output in Japan and Germany was well below prewar, in France and Italy it was not significantly different from prewar level. 1957 virtually completed a decade of industrial expansion and marked the peak of a strong capital goods boom in the United States. 1960 and 1961 represent the latest years for which comparable data are available.

In the 1938-48 period only the United States and Canada show appreciable growth. These were the "Arsenals of Democracy" and expanded sharply to serve the Western Allies as production centers. They also suffered none of war's physical devastation. Germany and Japan were savagely mauled by war and much of their industrial base destroyed. The other Western European nations just about stayed even; the strength of war demand was largely offset by war destruction. The United Kingdom and the Netherlands were less touched by physical destruction than France and Italy.

In the 1948-57 period the war torn nations worked, with massive United States help, to rebuild capacity and to meet current and deferred demand. They not only had to make up for war's destruction but also for some of the gap in growth that resulted from the depression of the 1930's. The United States and Canada had no wartime gap to overcome and actually had made up some of the depression gap during the war years. Nevertheless, they too had deferred civilian demand to meet and showed substantial growth in the period. The United Kingdom suffered from many

complex economic maladies and special conditions; it lagged severely. In Taiwan the Chinese Nationalists worked to create a new nation.

To some degree these same forces continued to work in the last period but their strength was diminished. In both the United States and Canada deferred demand had been largely met; it still existed in Western Europe, Japan and Taiwan.

Taking the period as a whole, the United States and Canada show more growth in real product per capita and as much or more in industrial production as do the Western European states and the Asiatic countries. Only the United Kingdom shows a tendency to lag. Using the prewar year as a base, growth in Germany, France, Italy and Japan, impressive as it has been, is less striking than that in Canada and the United States.

My citing of the above record is not intended to deprecate the fine performance of Western Europe, Japan and Taiwan in the 1950's, nor to serve as a basis for complacency about the United States record. I believe it not only desirable but necessary for us to grow faster than we have in recent years. I think, however, that the United States (and Canada, also) have done better than some of the apostles of growth admit, and that the easy assumption that Western Europe and Japan have broken through to a new era in growth rates needs to be demonstrated over a longer period of time.^{9/}

Tables A-III, A-IV and A-V are designed to present data for the same nine countries with somewhat different periods used in the analysis. Table A-III shows data for real product, real product per capita and prices (cost of living) for 1948-52, 1952-57, and 1957-60 or 61. Table A-IV shows data on interest rates

^{9/} This statement is consistent with the findings of studies on long-term growth rates. See, for example, Kuznets study of long-term growth in 18 nations which indicates that growth rates over the long pull do not vary greatly from nation to nation. Kuznets, Simon, Six Lectures on Economic Growth, Free Press, Glencoe.

in 1948, 1957 and 1962, and on money supply changes during the periods 1948-57 and 1957-61. Table A-V merely brings together in one place certain data from the other four tables.

For the purpose of this part of the analysis there is no point to using the war period and its immediate aftermath, 1938-48; we can be satisfied to use postwar experience. The breakdown of the 1948-57 period into two sub-periods is done for two reasons. The Korean War had a pronounced impact on raw materials prices generally and some impact on production in the United States, Canada and Japan. Those effects came mostly from 1950-52. Perhaps more importantly, the sub-periods separate out meaningfully the experiences of nations utilizing orthodox monetary and fiscal policies as stabilization devices.

By using the word "orthodox" in respect to monetary policies I mean to imply that those policies were used flexibly and forcefully in attempts to exert stabilizing influences on demand and prices, and foster money and credit flows to facilitate orderly economic growth.^{10/} In keeping with the title of my paper, I will confine my discussion to monetary policy, although obviously fiscal policy was an important part of the "orthodox" stabilization effort.

^{10/} Monetary policy techniques employed in the various countries differed, partly because of differences in institutions, partly because of differences in situations. I count in the monetary policy area, currency reform, devaluation, blocking of accounts, capital levies to absorb redundant currency, capital issue control, and restrictions on Government use of central bank credit, as well as the more traditional methods of monetary policy, such as discount rate changes, loan ceilings, open market operations, and reserve requirements.

It will be useful to date roughly the beginnings of "orthodox" monetary policies in the nations employing them.^{11/} West Germany and Italy may be counted as beginning stabilization at the outset of the first period, 1948; the Netherlands and Japan in 1951, and France not until 1959. The moderation of price rise in France between 1952 and 1957 reflected in large measure a drawing on external goods which caused a major run-off of French reserves and which led to a financial crisis at the close of 1958. In part, relative price stability reflected a lack of sensitivity in the French cost of living index because of subsidies. Actually part of the price rise since the French stabilization is no more than statistical, reflecting removal of many subsidies.

The United States, the United Kingdom and Canada may be classed as following orthodox monetary policies throughout the period. The United States program is given in some detail later in this paper. The United Kingdom program has not been conspicuously successful, partly because of many special circumstances, including Britain's position as a reserve currency nation, and partly because of some lack of consistency in stabilization programs outside the monetary policy field. In a sense, Britain may be viewed as a nation which has successfully

^{11/} The datings used require a word of explanation. The West German currency reform went into effect in June, 1948 and permitted flexible monetary policy to operate effectively almost at once. Italian monetary stabilization was carried out between 1947 and 1949; I use 1948 as a date for "orthodox" policy because the Italians succeeded in holding prices in 1948 at the 1947 level. In the Netherlands a stabilization program began in 1945 with currency reform. It was not particularly effective because of large Government deficits and prices rose quite sharply over the next five years. By 1951, however, the Dutch program was effective. In France, serious stabilization efforts began in 1957 and culminated with the "heavy" franc introduced early in 1960. Effective stabilization may be dated from 1959. In Japan stabilization efforts began in 1946, but, similar to the Netherlands experience, were not particularly effective. Beginning in 1949-50 Japan moved more vigorously and by 1951 the stabilization program was taking hold.

invoked stern policies to meet intermittent financial crises, but has relaxed too much between such crises.

Canadian experience is interesting because it has some features in common with French experience. An adverse balance of payments on trade account was offset for some time by capital inflow. While monetary policy was reasonably conventional, budget deficits and, more recently, some nationalistic discouragement of capital inflow led to increasing difficulties, and when capital inflow actually reversed, Canada ran head-on into a financial crisis due to loss of reserves. Devaluation, large foreign borrowings, and more orthodox budget policy actions of mid-1962, coupled with orthodox monetary policy, have been conspicuously successful in resolving the crisis and bid fair to be successful in the long run also.

Taiwan, alone among the nations listed in the table, has not followed an effective stabilization program, although recently some efforts have been devoted to that end with the reestablishment of the Central Bank of China. Taiwan, as noted, is a special case, but, in another sense, is representative of many other underdeveloped nations. Taiwan has pursued extremely expansionary programs almost without regard for cost. Under ordinary circumstances these would have resulted in foreign exchange crises and very drastic stabilization measures or bankruptcy. In the case of Taiwan, United States aid largely offset the foreign exchange drains, a situation not unknown in many other underdeveloped countries, particularly some of the Latin American states. It does not follow that policies such as those pursued in Taiwan contribute to growth; it merely indicates that it is helpful to be a strategically located underdeveloped nation if one wishes to be extravagant.

Table A-III, I believe, demonstrates that relatively low price increases may be associated with relatively high growth rates, and that the former has accompanied orthodox stabilization programs. This is marked for the 1948-60

period as a whole and for the sub-periods. Japan before 1952 and Taiwan throughout the period are the only real exceptions.

Table A-IV indicates that neither inflation of the money supply nor an overlarge money supply produces low interest rates. Here the example of Taiwan is particularly instructive. A large part of the interest charge in Taiwan represents an inflation premium which lenders demand. Reduction of inflationary pressures and in the rate of increase in the money supply in the period after 1957 led to reduced interest rates. Recent Canadian experience also is interesting in this connection.

Neither do the tables indicate any close connection between low interest rates and high growth rates or the converse. Instead, the rate pattern seems to indicate that rates reflect, or perhaps it would be better to say, have been allowed to reflect demand-supply interrelationships and the marginal productivity of capital.

In sum, the major lesson to be learned from the data in the tables seems to be that monetary policy can contribute to growth through its stabilization efforts, or, at a minimum, that such efforts do not impede growth. The record in this respect would seem to be reasonably conclusive. Another lesson would seem to be that interest rate policy should be shaped to fit the situation, stimulating investment and/or saving as particular conditions arise.

Tables A-I through A-V have suggested answers to the first two questions I raised. Charts B-I and B-II, and Charts C-I, C-II, and C-III, with their accompanying record of policy actions, suggest answers to the third question. The first two charts, one based on 1929, the other on 1945, merely show for the United States real gross product, gross product in current dollars and the broad money supply (currency, demand deposits and commercial bank time deposits) over the years. They indicate the excess liquidity built up in the depression and war years has

been absorbed gradually. They also indicate that money supply growth has been rather consistently ahead of real product growth; in fact, probably too close to current value product growth. The general conclusion to be drawn is that if monetary policy has erred, it has erred on the side of ease rather than restraint.

The C series of charts and the policy record brief give a detailed picture of the course of monetary policy in the United States over the past twelve years. The colored background on each chart represents changes in the general tone of monetary policy - easy (gray), restrictive (red), or neutral (white).^{12/}

These changes in the "tones" of monetary policy are taken directly from the official policy record of the Federal Open Market Committee as it appears in the annual reports of the Board of Governors of the Federal Reserve System. The Open Market Committee held more than 140 meetings in the twelve years covered by the charts. Broadly speaking, policy changes may be viewed as being of two degrees of strength - major and minor. The major shifts have been marked generally by changes in the directive (during most of the period by changes in the b clause of the directive) given by the Committee to the Account Management. Minor shifts

^{12/} The word "change" must be emphasized since the colors do not necessarily represent the general tones of policy. Ideally, both change and general tone should be shown and could be by using different color intensities. It was not possible to produce a chart in that form in time for the presentation of this paper.

For much of the period the colors shown do indicate general tone as well as changes in tone. Two notable exceptions may be cited, however, as examples. In the first few months of 1957 the color background shows shifts from red to gray and the reverse. The tone of the whole period was restrictive; the changes really should be viewed as shifts from more to less restraint or vice versa. Thus that period would show up more accurately were various shades of red used. In much of 1960 and 1961 the general tone would require various intensities of gray since the general tone was easy even though there was a slight shift to less ease late in 1961. Finally, it should be noted that the white background for 1962 does not indicate neutrality; since the policy record for that period is not yet published, the background should be viewed as absent of color rather than as white.

have been marked by what I call "shades" in the instructions given to the Account Management within the framework of the directive. The policy record shows both directives and "shades". All of these are listed in the policy record brief in the annex. During the twelve years there were 30 changes in directive and 47 "shades" in the instructions. It is from these that the colored backgrounds are derived.

I should point out again that monetary policy formulation is a continuous process and consequently that transitions from ease to restraint or vice versa are made gradually.

The "tones" of monetary policy reflect primarily the open market operations of the System. There are other monetary policy tools, of course, and changes in these also are shown in the policy record brief and on Chart C-I. There were 8 changes (1 increase and 7 reductions) in reserve requirements (including the steps taken to free vault cash for reserve credit), 9 changes (5 increases and 4 reductions) in margin requirements, and 19 changes (11 increases and 8 reductions) in the discount rate during the twelve years. Regulations W and X also were operative in the early part of the period.

The number of policy changes indicate that monetary policy was flexible in this period. To answer the question as to whether it flexed in the right direction at the right time, there are plotted on Chart C-I data on reserves^{13/} and short-term interest rates to represent the proximate objectives, on Chart C-II

^{13/} A note on the data on total and nonborrowed reserves is in order. The data are adjusted for the reserve requirement changes so, in effect, the curves represent constant reserve requirements. They also are adjusted for seasonal. It is necessary to make these adjustments to make the reserve data meaningful.

It might also be noted that the general tone of policy may be judged by the course of the proximate guides to policy.

data on bank credit, the money supply (including commercial bank time deposits), liquid assets, and the gold stock to represent the intermediate objectives, and on Chart C-III data on income, production, unemployment, prices and investment to represent the ultimate objectives. These data should not be taken to be exhaustive of the guides and objectives of policy; they are reasonably illustrative, however.

Comment on the charts can be quite brief. The course of policy seems to show that shifts were reasonably timely, adequate and effective. They indicate that monetary policy never attempted to reduce credit volume or the money supply in absolute terms, but merely to reduce at times their rates of growth. Responses of the proximate objectives seem to have been reasonably prompt and the course of the ultimate objectives, which also may be viewed as general guides to the tone of policy, matches fairly well with the course of policy.

The answer suggested to the third question then is that monetary policy has been reasonably well timed and its goals reasonably well achieved. Therefore, it would seem that monetary policy has made such contribution as it could to growth.

It seems unnecessary to recapitulate the empirical evidence, but I think it worth noting in conclusion that the record of experience offers small comfort either to those who class monetary policy as impotent or unimportant or to those who view it as more of an impediment than an aid to growth. Where it has been employed appropriately and courageously it has helped to create a climate in which growth could flourish if the other factors making for growth were present.