I am delighted to be with you today, and honored to participate in the series of "Distinguished Lectures on Banking and Monetary Policy."

Before launching into the main part of my talk, let me emphasize how important the university and the scholar are in the general scheme of things today. I am referring specifically to you students and teachers, and your counterparts in other colleges and universities. Although some may dispute it, I personally believe that the solutions to most of our social, political, and economic problems will be found through higher education and research-related activities.
The importance of the university in the modern world has long been recognized by commercial bankers in Ohio, as well as by the Federal Reserve Bank of Cleveland. The joint sponsorship of this series of lectures by The Ohio State University and the Ohio Bankers Association points up the key role of the university in the thinking of commercial bankers. These lectures are, in effect, a cross-pollination of ideas, a dialogue between bankers and scholars about the major problems of banking and monetary policy. Hopefully, they will promote mutual understanding of basic difficulties, identification of the significant variables relating to them, and ultimately solutions to some of the complex questions that are puzzling us today.

MONETARY POLICY AND UNCERTAINTY

My topic today is "Monetary Policy in a Changing World." More precisely, it should be called "Monetary and Fiscal Policy in a Changing World," since the one cannot be discussed without the other; but I will try to emphasize monetary policy and thus conform more closely to the title of the lectures. I shall touch briefly and informally on the elementary textbook theory of fiscal and monetary policy and indicate some of the problems that arise when we attempt to apply pure theory in a world of uncertainty and change. I shall then review the record of recent years and point out some of the errors that I think have actually been made in this area. And finally, I shall identify what seem to be the principal sources and causes of the errors.

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Let us start with the conventional wisdom as it is described in the elementary textbooks. There is today almost complete agreement that monetary policy and fiscal policy share the same general objectives; to help the economy achieve economic growth without inflation and with reasonable equilibrium in the international balance of payments. The textbooks tell us further, that an appropriate mix of monetary and fiscal policy is needed to achieve these objectives. On some occasions, it may be desirable to have a little more fiscal policy and a little less monetary policy, and on some occasions, the reverse. But the point is that the state of the economy is assumed to be known with almost complete certainty, so that there is virtually no uncertainty about the appropriate economic policy mix.

A number of problems arise when we attempt to apply textbook theory in practice, due largely to the difficulty of predicting economic events. The economy -- instead of moving along a steady path at a constant rate of growth -- moves at a constantly changing rate, which is difficult to forecast accurately. This is not really surprising since the principal parameters of the economic system are not really stable, economic relationships are not fully understood, and unexpected developments affect the system at various times and in various ways. As a general matter, rates of growth of population change over time; technologically determined production functions change with innovations; and consumers' attitudes and tastes shift erratically. Most importantly of all, Federal spending and taxing are determined in part by social, political and international considerations and only in part by what would be good economics.
The basic problem of an appropriately coordinated monetary and fiscal policy is to determine the course of the economy over a finite period ahead. If the period is as long as a year and a half (as in the President's annual budget, for example), this is an extremely difficult job when you consider the kinds of exogenous factors at work. To illustrate: the step-up of our defense effort in Vietnam had major influences on domestic economic activity in the second half of 1965 and in all of 1966 (influences that were largely missed in the standard forecasts made at the beginning of both years). What is in store for 1967? Frankly, I do not know. But I do know that with the future magnitude and duration of our military effort unspecified, there is a wide margin for error in any forecast of economic activity in the period ahead. Another illustration of an exogenous -- and unpredictable -- influence on the economy is the fact that we are faced this year with many major labor negotiations and the possibility of work stoppages. These, too, have serious unknown implications for the pace and direction of economic activity in 1967. Another complex of factors -- partly exogenous and partly endogenous -- has to do with consumer spending plans. Given the uncertainties of Vietnam and possible labor stoppages, as well as the current lower level of the structure of interest rates and the uncertain course of disposable personal income, it is difficult to predict how consumers will behave in the months ahead. Any or all of these factors could easily and appreciably change the future course of the economy in 1967, as well as the appropriate mix of monetary and fiscal policy today.
This type of uncertainty is indeed unfortunate, although uncertainty is a basic fact of life. Policy makers must assume, on the basis of the best evidence available, that the economy will behave in a certain fashion over a finite period, and formulate an appropriate policy mix for that finite period. If economic conditions alter unexpectedly during the period of the forecast, what was once judged to be appropriate policy will become inappropriate. The inflexibility and rigidity of the policy mix -- particularly the fiscal aspects of that policy -- create the crux of the difficulty. While monetary policy can adapt quickly, fiscal policy cannot. The inflexibility and rigidity of fiscal policy were clearly demonstrated during the second half of 1965 and the first half of 1966, when fiscal policy was too expansionary while the economy was overheating, and during late 1966, when fiscal policy was inadequately expansionary while the economy was cooling off. The basic problem of fiscal policy is the inflexibility of the Federal budget once formulated, and the slowness with which it can be reformulated under our existing institutional arrangements.

Monetary policy also has its problems, but they are not the same problems as those of fiscal policy. Both types of policy rest on fallible forecasts, but, fortunately, monetary policy is not rigid and inflexible. To the contrary, it is extremely responsive and accommodative. Given the right information, monetary policy can be adjusted quickly to changing economic circumstances, as attested by the shift that occurred last November. Although policy makers look ahead as far as the horizon permits, policy can be reformulated at intervals as short as the periods between meetings of the Federal Open Market Committee. This flexibility is much greater than that of fiscal policy, where the operational lag may be as much as a year and a half, from January through the end of the next
fiscal year, which is the current planning period for the Federal budget.

The relative flexibility of the Federal Reserve System partly reflects the fact that it is not committed to a published forecast, and partly the fact that it is an independent agency within, but not of, the Government. Within the System, a small group of people (FOMC) -- with diverse backgrounds and interests -- meets frequently to discuss economic developments and must make a policy decision at each meeting. Nevertheless, despite timeliness and flexibility of monetary policy, many basic questions regarding its effects on the economy are still unresolved. The lead-lag relationships of changes in bank reserves, the money stock, bank credit, and interest rates are not fully understood. For example, tight money in 1966, has had, and will continue to have, uneven effects on various sectors of the economy in 1967 and perhaps beyond, and the amount and timing of these effects are unresolved. The uncertainty associated with variable time lags and impacts are problems that are, of course, not unique to monetary policy. Fiscal policy also has distributed effects on various sectors of the economy, and the magnitudes of these effects are not known. For example, the elimination of the 7% investment tax credit in October, 1966 (just at the wrong time, as it turned out) has had, and will continue to have, pronounced effects on the amount and timing of plant and equipment expenditures in 1967, the extent of which can only be approximated. In addition, I do not know what the effects of the restoration of the investment tax credit will be in 1967 -- or in 1968, or beyond.

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Only one thing, based on invariant historical experiences, is really clear. If the economy overheats later this year, the overheating will be blamed on monetary policy, no matter what fiscal policy may be or may have been. It will be said that we overreacted to recessionary fears in late 1966 and early 1967. On the other hand, if the economy were to sag further, we will be blamed for excessively tight money in 1966 or the fact that we underreacted in 1967, independently of the nature of fiscal policy. The rule is: heads, monetary policy loses; tails, fiscal policy wins. Hopefully, in the remainder of my talk I will be able to rise above the perpetual squabble about the respective roles of monetary and fiscal policy, and shed some light on the practical difficulties of the Federal Reserve System as it attempts to conduct monetary policy on the basis of the information available. Let us therefore turn to a review of economic developments since the last recession, and the role of public policy in that period.

ECONOMIC DEVELOPMENTS SINCE 1961

In the long business expansion since early 1961, the economy has been characterized by three distinct periods of economic growth, with a different mix of monetary and fiscal policy in each period. Between the cyclical trough in February 1961 and mid-1965, the economy advanced at a remarkably well-balanced and noninflationary pace. Real GNP rose at a high average rate of about 5.5%, and the GNP deflator rose at a relatively low average annual rate of about 1.4% a year. In an effort to close the gap between the economy's potential and actual output, both monetary and fiscal policy were expansionary throughout the period. Around the time of the reduction in personal and corporate income more
taxes in February 1964, real economic growth accelerated but without a noticeable acceleration in prices. The Federal Reserve System maintained an accommodative monetary policy, which provided the money and credit needed to support enlarged spending by businesses, consumers, and government.

During each of the next two periods, the mix of monetary and fiscal policy was less appropriate. From mid-1965 until mid-1966, the economy was characterized by excessive aggregate demand relative to the nation's capacity to produce. The results were imbalances and distortions in various sectors of the economy, and a general inflationary overheating. In mid-1965, accelerated defense spending for Vietnam was superimposed on rapidly rising business expenditures for fixed plant and equipment. Inventory spending also expanded rapidly, both for defense purposes and other uses. (Parenthetically, as I will discuss later, our information on defense spending and inventory investment was highly inadequate at that time.) Operating rates in many lines began to exceed desired levels, and labor shortages appeared. After years of virtual stability, unit labor costs began to rise rapidly, profit margins fell, and inflationary pressures accelerated. Between the second quarter of 1965 and the third quarter of 1966, real GNP rose at a satisfactory 5.5% annual rate, but the GNP price deflator increased at a 2.9% annual rate, about twice the increase of the earlier period.

The surge in economic activity generated enormous demands for funds, which could not be satisfied without an excessive expansion of credit. As inflationary pressures increased, the Federal Reserve System became less accommodative, the growth of bank credit slackened, and the entire constellation more
of interest rates began to move up. The increase in the discount rate from 4% to 4-1/2% in December, 1965, although at first highly unpopular, gained grudging support from informed quarters when it became apparent that the Administration was not going to ask for an appropriate contracyclical increase in income taxes. The logic supporting earlier fiscal measures to invigorate a lagging economy now argued for the reverse fiscal policy, but this was not to be the case. Despite token fiscal measures, such as the partial restoration of previously reduced excise taxes and accelerated income tax withholdings, the major burden of restraint fell on monetary policy.

This, as it turned out, had many unfortunate consequences. For example, as monetary policy became progressively tighter, and interest rates soared to the highest levels in 40 years, savings that normally flow through nonbank deposit-type institutions were diverted directly into higher yielding money market investments. Since deposit-type institutions normally supply the bulk of funds for residential construction, the mortgage market was seriously squeezed. The result was a sharp decline in housing starts and in residential construction.

The third period began in the fall of 1966 when it became apparent to the Federal Reserve that the overheated economy was beginning to cool off. While prices were still rising, the pace of the private sector slowed, and industrial production began to level. Moreover, just as economic activity began to moderate in October, 1966, fiscal policy took a restrictive step with the suspension of the 7% tax credit on business investment and accelerated depreciation allowances. The burden once again was on monetary policy, which

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turned progressively easier beginning in November. After a short period of hesitation, bank reserves began to grow rapidly, bank credit expanded sharply, the money supply increased, and interest rates declined.

Fiscal policy began to play an appropriate contracyclical role early in 1967. The Administration released funds that had been withheld from the highway program, made more mortgage funds available through FNMA, speeded up veterans' dividend payments, and in March called for immediate reinstatement of the 7% investment tax credit (which Congress is still considering). The existence of moderating tendencies in the economy was reconfirmed by the Federal Reserve System in March when reserve requirements on certain time deposits were reduced, and again in April, when the discount rate was cut from 4-1/2% to 4%. From the third quarter of 1966 to the first quarter of 1967, real GNP rose at a somewhat more subdued rate of 2.3%, but the price deflator continued to rise at a high annual rate of 2.8%, although other major price indexes showed moderating tendencies.

Despite the recently improved mix of monetary and fiscal policy, the nation's real economic growth will be small in 1967, judged by recent standards. Business investment in new plant and equipment is edging down, inventory accumulation has been reduced, and until recently, consumer spending has been sluggish. The basic question of the moment, from the point of view of monetary policy, is whether our stance is about right, or whether we should ease further or tighten. Whatever policy is adopted, our basic goal remains the same as it has always been -- to achieve balanced noninflationary economic growth.
LESSONS OF RECENT EXPERIENCE

In my brief review of economic developments since the last recession, I delineated a long period from 1961 to mid-1965 when the economy enjoyed steady growth and stable prices, and two short periods, mid-1965 to mid-1966, when growth was satisfactory but prices spurted, and mid-1966 to the present, when growth slackened while prices continued to rise. All of us can take pride in the record as a whole, but it could have been better, given better information, deeper insights, and more appropriate mixes of monetary and fiscal policy. Let us see what constructive steps should be taken to improve public policy in the future.

First, it is imperative that we find some way of reducing the inflexibility and resulting untimeliness of fiscal policy. Part of the trouble lies in the budget making process itself. Federal budgets are based on specific, one-shot forecasts of what the economy will be like over the next 18 months; against this background, receipts are estimated, tax policy planned, and spending projected. If the forecast is wrong, as it almost always is for any 18-month period, estimates of income will be wrong, and spending plans and tax policy will be inappropriate for economic stabilization and growth. The difficulty is that Federal programs for spending and taxing take many months to place in train, gain momentum in the process, and cannot easily be reversed, once started.

One practical solution would be to provide for the regular publication of revised quarterly budgets, similar to those the Bureau of the Budget will provide this year to the Joint Economic Committee. Another constructive step
would be to develop better understanding and agreement as to which budget concept is most appropriate for policy planning purposes. The present system of multiple budgets is confusing to the layman, and lends itself to manipulation to show a surplus -- or a small deficit -- in whatever budget happens to be in favor at the moment. As a former Chairman of the Council of Economic Advisers recently pointed out, we are operating in a kind of "fiscal fog" that could be highly dangerous. Fortunately, the President plans soon to establish a bipartisan group to study budget processes, with a view towards reform and improvement. I personally think also that some way must be found to provide for speedier adjustments in the tax system to changing economic conditions. Perhaps an independent agency might be given the power to adjust taxes upward or downward as needed within a small percentage range, subject to review and revision by Congress or the Executive. Admittedly, the practical political difficulties of any such plan are enormous, but the potential economic benefits are even greater.

Second, monetary policy also is in need of some improvement, particularly in the area of measuring time lags and impact. Frankly, I think monetary policy has been quite good since early 1960. There now seems to be general approval among economists of the timeliness and direction, if not the magnitudes, of recent monetary policy changes, although there is considerably less agreement, as I have indicated, on whether we tend to overstay our position. Also, many criticize us for not designating one particular economic time series as the major monetary variable. Should it be Professor Brunner's "credit base," Professor Friedman's "broad" money supply, or the Federal Reserve's own brain child, "the bank credit proxy"?
Frankly, I do not know the answer, and doubt that anyone else does. In practice, the Federal Open Market Committee looks at all kinds of variables and tries to account for significant variations in rates of change among them. Econometric models have a way of indicating that one or another of a set of variables is the most important variable to be considered, but the selected variable has a disconcerting way of changing, depending upon the model and time period considered. In part, this probably reflects inherent statistical problems associated with economic model building, for example, the high degree of intercorrelation between the dependent variables in the model, serial correlation, incorrect assumptions about the distribution of error terms, and so forth. In part, I suspect that it also reflects the fact that economic relationships are too complex and interrelated to be represented by any single time series, or any single set of variables. In any event, the Federal Reserve System is keenly aware of the gaps in its knowledge and is sincerely trying to fill them.

As a third step in improving public policy in general, we desperately need to improve our information system, by obtaining more accurate and timely statistics, by improving coverage, and by filling some of the gaps in our knowledge. Consider, for example, business inventory investment, which plays a major role in explaining cyclical swings in economic activity generated in the private sector. Publication of monthly statistics on combined manufacturing and trade inventories now lags the event by about two months. This means that today we know something about what happened to inventories in February, but subsequent developments remain shrouded in mystery. This is not only bad by itself, but the early releases on inventories are subject to substantial revision, due chiefly to difficulties in

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obtaining reliable information on manufacturing and retail stocks. The same difficulties carry over into the GNP statistics. To illustrate, in January and early February, the Federal Open Market Committee operated on the assumption that business inventories had increased by $14.4 billion in the fourth quarter of 1966, only to learn at the end of February that inventory investment had been $2 billion higher, implying a much more severe inventory adjustment later on.

In addition to accuracy and timeliness, we need to improve the coverage of our statistics. Consider, for example, the important influence of changes in liquid asset holdings of businesses and consumers on savings flows, the money stock, and sources of commercial bank funds. We rely here on quarterly FTC-SEC estimates of "cash," "U.S. Government securities," and "other" liquid assets, rather than on more precise and meaningful categories (now almost totally unavailable to us) of such items as corporate holdings of Eurodollars, time certificates of deposit, foreign Treasury bills, and so forth, all of great concern to the monetary authorities.

A third major information problem involves the gaps in our knowledge. A major information gap relates to defense spending. As mentioned earlier, the huge and largely unexpected surge in defense spending that began in late 1965 generated far-reaching reactions in the economy, the effects of which are still with us. Undoubtedly, if monetary and fiscal policy makers had been fully aware of developments then, steps would have been taken earlier to restrain them, and less restraint would have been needed later on. The fact is, however, that key variables relating to defense spending are almost impossible to predict, and impossible to obtain even within the various agencies of the Government itself.
Unfortunately, these unexpected escalations and de-escalations in defense spending can do serious harm to the domestic economy, unless offset by appropriate public policy. At least, important policy making groups such as the Council of Economic Advisers and the Federal Open Market Committee should be informed, to the extent possible, of major shifts in defense spending, even if such information must be withheld from the public on grounds of national security. If this type of information is not available, then steps should be taken to develop it by the appropriate agencies.

In general, I suspect that the root of the difficulty in obtaining adequate and timely information goes back to our old bugaboo, the fiscal processes of the Government itself. Unless and until high-level public officials recognize the dangers involved, no department of the Government will receive adequate appropriations for such mundane things as data collection or data processing, which are so necessary for efficient policy making. It is inconceivable that the greatest nation in the world, with a Gross National Product of over $750 billion, and with Federal Government outlays of over $150 billion a year, spends only $125 million on its Federal statistical programs. Surely, we need to improve the quality and timeliness of our economic information, even if it means spending more money.

These then, in broad brush, are the elements needed for a better mix of monetary and fiscal policy in the future: first, a more flexible fiscal policy, particularly a more flexible tax policy; second, an improved theoretical basis for more
for monetary policy; and third, better data for the policy maker in such
important areas as liquid assets, business inventories, and defense spending.
We, of course, also need to improve our economic forecasts. This is something
to which we can all contribute -- in the universities, in Government, and in
business.

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