The research program of the Subcommittee on the Directive has encompassed a broad inquiry into the choice of appropriate short-run operating variables to be used by the Trading Desk, the intermediate and longer-term monetary aggregate targets of the FOMC and the relationships of these targets to output and prices. Since about 1970, when the FOMC began to place greater emphasis on the monetary aggregates, there has been a great deal of debate within the Federal Reserve System and elsewhere about these questions--particularly in view of the uncertainties that exist about economic behavior, the effects of monetary policy on the economy and the course of other important policy variables, such as fiscal policy, on economic activity.

The results of earlier research had already increased our understanding of monetary processes. But when the Subcommittee began its work, there remained a need for a comprehensive analysis that took explicit account of the chain of relationships starting with the operations of the Trading Desk, going through the behavior of the monetary aggregates and other financial and real sector variables, and ending with output and prices--the ultimate objectives of monetary policy. A better understanding was needed of the meaning of the fact that the effects of monetary policy on the economy are distributed over time, how these effects are subject to uncertainty, and how monetary policy decisions should be made in light of the existing uncertainties.

The research program of the Subcommittee tried to provide such an analytic framework. Of course, many large and important issues were left unresolved, but some interesting results were obtained and numerous questions were raised that will provide a research agenda for future work within the System and in the academic community.

A main feature of the Subcommittee's analysis involves a means of using partial incoming information about the movements of the money supply, interest rates and other intermediate variables in a systematic way to interpret the progress of the real economy. Policy decisions must be based on highly uncertain economic forecasts, and uncertain knowledge also, of the effects of policy actions on the forecasts. While the staff attempts

to provide forecasts of economic activity and prices consistent with an assumed course of policy actions, staff expectations will not generally be realized. Worse still, for many of the variables that are of importance to monetary policy, the resulting forecast errors cannot be measured frequently, so that there is some danger of drifting further away from the ultimate objectives of policy. To avoid this, careful attention must be given to the variety of partial information on the course of the real economy--including, but not confined to, the movements of the monetary aggregates themselves. Current FOMC procedures do this already. What the Subcommittee's analysis suggests is that a somewhat more formalized procedure may be useful--using statistical techniques applied to forecast errors of intermediate variables to construct revised forecasts of such things as real GNP, employment, and prices--revised forecasts which can then be used as the basis for a reconsideration of earlier policy decisions. These formal statistical techniques contain provisions to help to avoid the potential pitfalls of simply 'looking at everything.' I would want to note, particularly, that these statistical techniques are not confined to forecasts based on formal econometric models; they are equally applicable to judgmental forecasts.

As I noted earlier, the behavior of the monetary aggregates themselves may give some clues to the accuracy of an economic forecast. For example, weak growth of M1 may at some times indicate a deteriorating economy, or at others, a shift in the relationship between money and GNP. It makes sense to use any information of this kind that can be gleaned from incoming statistics. Failure to do so would mean that useful information was being ignored, and this could well mean a failure to achieve more fundamental objectives.

This assumes, of course, that useful information can actually be gleaned from forecast errors of movements of money supply and other financial and real variables. Limited empirical evidence supports this conclusion but it does not prove it. Some economists believe that partial weekly or monthly data can provide such limited information about the behavior of the real economy that the Federal Reserve should fix growth rates of the monetary aggregates and do nothing more, at least over periods as long as one quarter. This is an empirical issue which is being given further study. In the process, the staff is taking steps to make more explicit the relationships between the short-run, intermediate-term, and longer-term forecasts provided to the FOMC. The present judgment of the

Subcommittee, however, is that it would not be desirable to operate monetary policy in terms of predetermined, fixed growth rates of the aggregates.

The Subcommittee recommends that monetary aggregates continue to play a central role in characterizing monetary policy. But it does recommend that the monetary aggregates be viewed as intended values subject to modification based on FOMC appraisal of ongoing economic activity, rather than as invariant targets. This recommendation provides the basis for continued interest in the problem of choosing among potential short-run operating targets in order to achieve monetary aggregate intentions--the problem to which I now turn.

Members of the Committee have already been provided with a large amount of information concerning the choice among potential short-run operating targets. Additional material incorporating the most recent revised data and a more compact compilation of the available evidence has been distributed today in the form of an Appendix to these remarks.

These results include the experience for all of 1975. They suggest that in the one year period beyond the period of estimation, the equations that rely on interest rates and income or sales variables to predict M1 have deteriorated badly, with prediction errors substantially in excess of what would be expected and with large errors than in any prior single year within the sample period. These equations require predictions of income or sales if they are to be used in forecasting M1. The most recent results indicate marked deterioration even when actual values of income or sales are used to generate the M1 predictions.

The prediction errors of the nonborrowed reserves and total reserves equations were also large in 1975, but do not suggest the same degree of deterioration relative to sample period performance noted for the equations previously discussed. On average over the year, the equations based on money market conditions and income measures had smaller absolute prediction errors than either of the reserve equations, but the nonborrowed reserve equation performed better about one-half the time. So far as can be determined, the deterioration in the predictive performance of the total reserve and nonborrowed reserve equations during 1975 is attributable to the large decline in certificates of deposit, releasing reserves to support a larger volume of M1 and resulting in equation underpredictions over most of the year. The equations cannot take account of changes of this nature, but judgmental adjustments to the predictions of the equations

could be made if they were used in an actual forecasting situation. The
equations for the nonborrowed base and the total base yielded predictions
of M1 during 1975 within the expected range of error. The average errors
were smaller than those of any of the other measures. Nevertheless, the
nonborrowed reserves equation provided more accurate predictions than
either of the base equations in five months of the year.

     Finally, the predictive performance of RPD deteriorated sharply
during 1975, substantially underpredicting money throughout most of the
year. The 1975 errors in predicting M1 were considerably greater than the
errors realized in any of the years of the sample period.

     With minor exceptions, the same summary describes the predictive
experience of these equations for M2 as well during 1975, except that the
superiority of the two base equations was more pronounced.