

Over the next months, April 1966 through December 1966—the period before and after the credit crunch—there was essentially no monetary growth at all. And in 1967 annual monetary growth was 7.2 percent, a rate that has not quite been matched through the present.

On the basis of that on again, off again performance, I think that the Federal Reserve is looking at something else than the quantity of money. Whether it should or not is another question. But in any event I am willing to conclude that it has not attempted to control monetary growth.

Question two: Could the Federal Reserve control monetary growth? I think there is good evidence that it could, but we can't be sure because central bankers here or any place else have never, to my knowledge, made any direct attempt at controlling the quantity of money.

Let's look at the evidence as far as the quantity of lawful money is concerned—that is the monetary obligation of the Government consisting of currency and coin and the deposit obligations of the Federal Reserve. I classify the Federal Reserve as part of the Government—I hope no one objects. The amount of lawful money depends on factors that are outside the control of the monetary authority, and other factors that it can control. Quite obviously there is a problem in predicting the effect of noncontrolled factors on the amount of lawful money. This is done by the Federal Reserve. Daily and weekly and monthly projections of these noncontrolled factors are made. For reasons that I really don't understand, these projections are not made available outside the Federal Reserve. But I know that they are available inside. Independent estimates have been made. These would suggest that over the course of a week or two almost all of the variation in noncontrolled factors could be accounted for and adjusted for by open market operations that were directed at a target comparable to the bracketing of a target by an artillery officer. To hit a target one would overshoot and undershoot until the desired average level of lawful money were achieved.

Controlling the amount of lawful money does not control the money supply, however. The ratio between the quantity of money and the quantity of lawful money is affected by policy instruments, for example, required reserve ratios, the discount rate, and Federal Reserve holdings of securities. It is also affected by factors that are outside the control of the monetary authority. Hence, one has a second level kind of prediction problem in relating the instruments of monetary policy to the quantity of money. I label these factors that are not controlled as the "distribution of money." It involves the distribution between kinds of money that are subject to different reserve requirements, between kinds of assets that are defined as money and those that are not, between bank required and excess reserves and the like.

On the basis of these noncontrolled but predictable factors, given the instruments of monetary policy, a very substantial percentage of the variation in monetary growth can be explained.

Professor Christ has mentioned the quarterly models that have been prepared in recent years. Many of these have taken the instruments of monetary policy as exogenous or independent factors, and subject to that limitation have estimated money flows, with upwards of 80 percent of the money flows from quarter to quarter being explained.

I would suggest that a much greater degree of accuracy in monetary