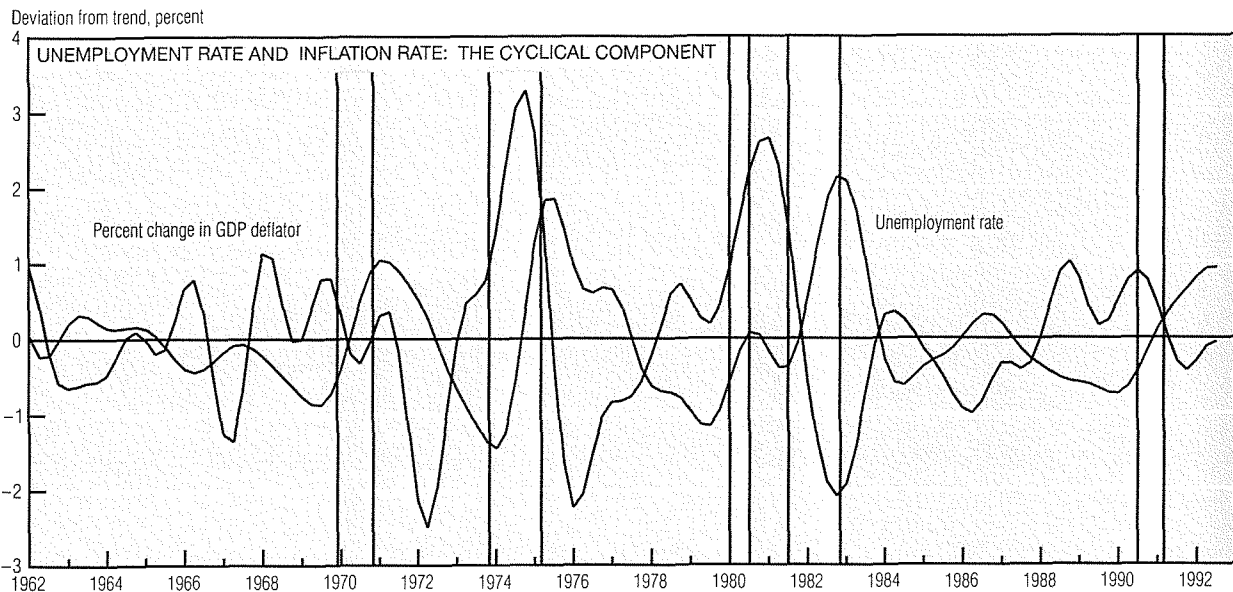
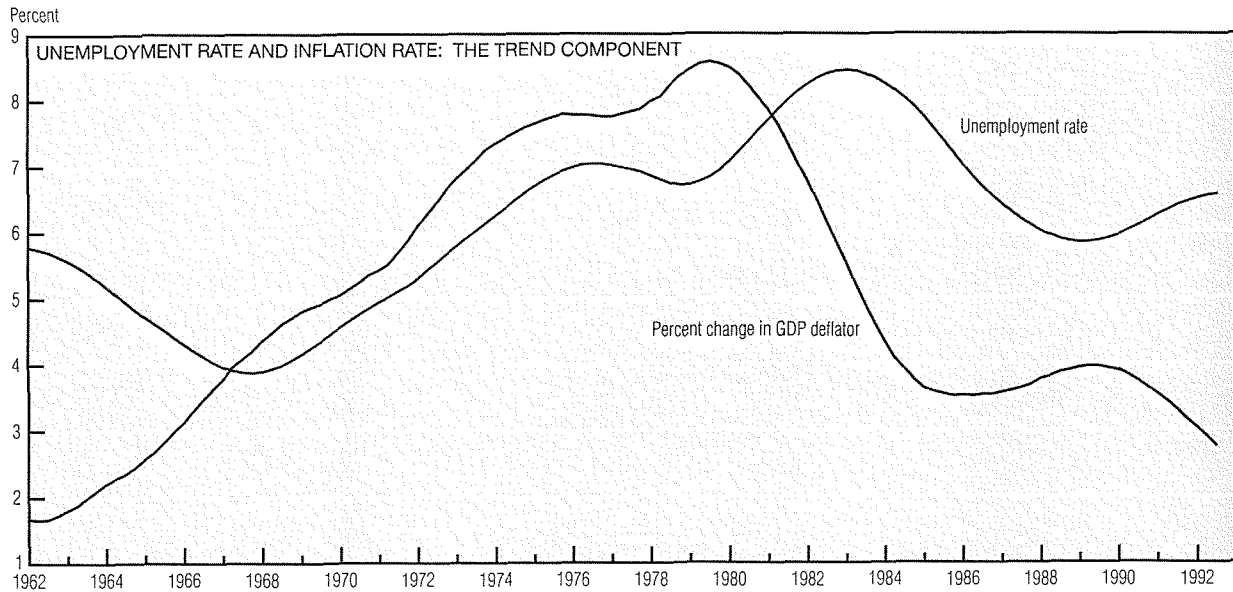


Monetary Policy



NOTE: Shaded bars indicate recessions. The trend and cyclical components are defined using a two-sided approximation to a band pass filter, with 12 leads and lags. The trend excludes all fluctuations less than 32 quarters; the cyclical component includes fluctuations between six and 32 quarters. For further details, see M. Baxter and R. King, "Measuring Business Cycles: Approximate Band Pass Filters for Economic Time Series," National Bureau of Economic Research, Working Paper No. 5022, 1995.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics.

Economists generally accept that monetary policy determines the rate of inflation, but they continue to debate whether it can affect real variables, such as the level of employment and the rate of economic growth. During the early 1960s, many policymakers believed they could routinely exploit a stable trade-off between inflation and unemployment. This trade-off, summarized by the so-called Phillips curve, implied that monetary policy could permanently lower unemployment by generating higher inflation.

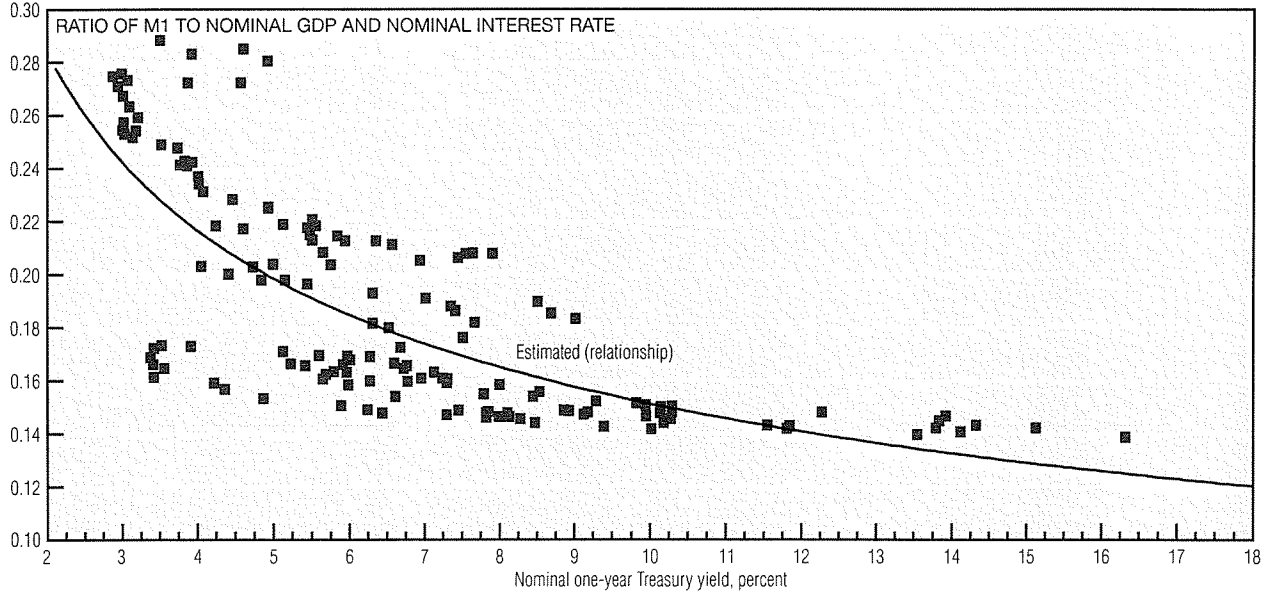
Two economists, Milton Friedman and Edmund Phelps, showed that this trade-off was illusory. In the long run, monetary policy could not move unemployment away from its natural rate. The Friedman-Phelps argument left open the possibility that policymakers might exploit a short-term trade-off in order to smooth business cycle fluctuations. Indeed, many people continue to believe strongly in a short-term trade-off—to the point where quarterly changes in unemployment are thought to contain information about

future inflation. A careful examination of the data suggests a much less precise view of any relationship, however.

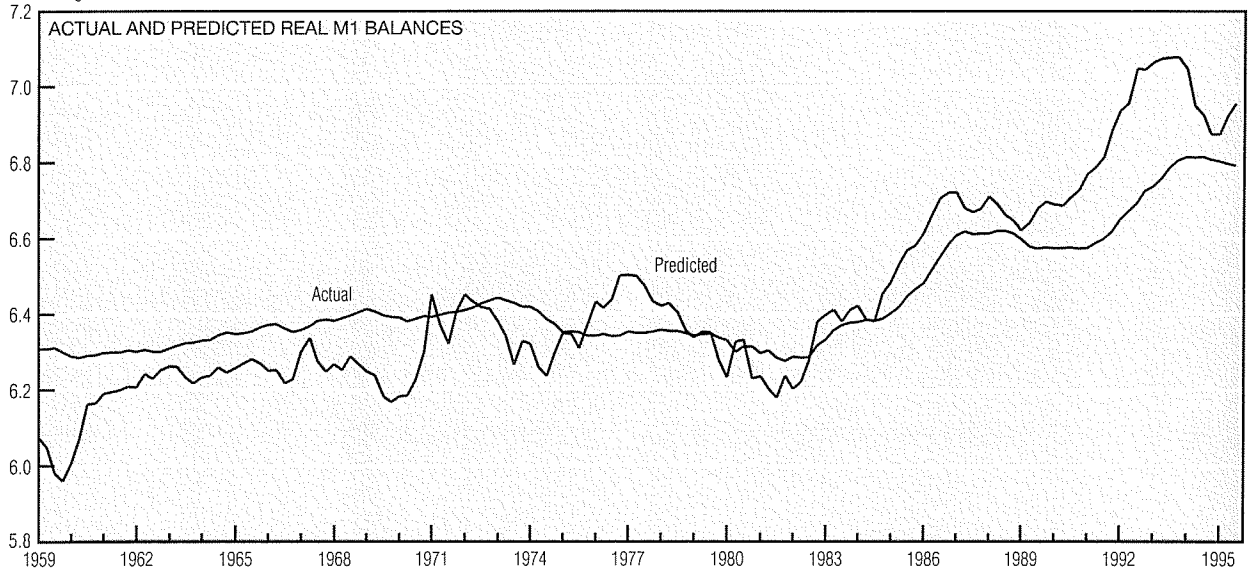
The inflation and unemployment series can be decomposed into a trend (long-run) component and a cyclical (short-run) component. Over the last 30 years, the trend components display a weakly positive, but erratic, correlation. This highlights the failure of the original Phillips-curve hypothesis, just as predicted by Friedman and Phelps. The trends
(continued on next page)

Monetary Policy (cont.)

Ratio of M1 to nominal GDP



Natural logarithm, billions of 1987 dollars



SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis; Board of Governors of the Federal Reserve System; and the Federal Reserve Bank of Cleveland.

do move in opposite directions during the early 1960s, however, explaining why the Phillips curve was accepted for a time.

The cyclical components display a more consistent pattern. Over the entire sample, the two series are negatively correlated. One must be careful in interpreting this result, however. The association observed in the data tells us nothing about causation—whether a change in inflation is responsible for movements in unemployment. Indeed, many economists argue that both series are simply responding to forces that

drive the business cycle. Recessions, for instance, are characterized by layoffs that raise unemployment. At the same time, incomes decline, reducing the demand for money. This may lower inflation because the money stock can grow only as fast as the rate at which people are willing to hold it.

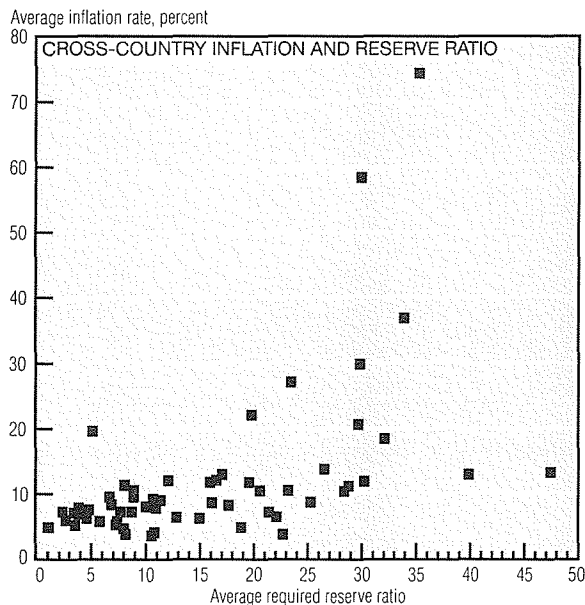
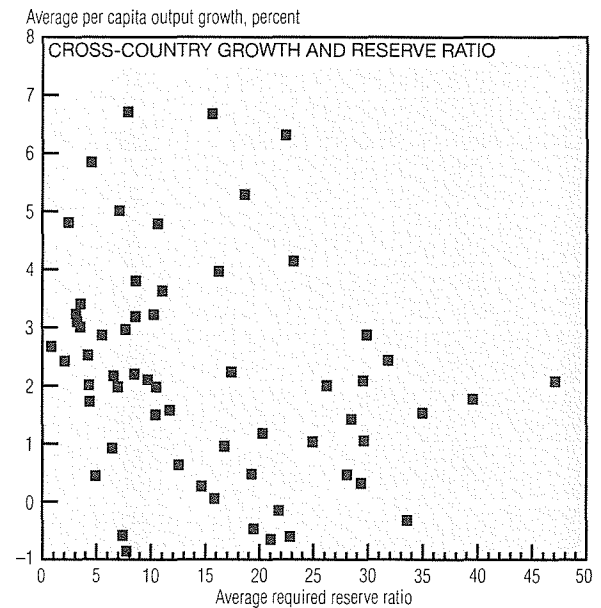
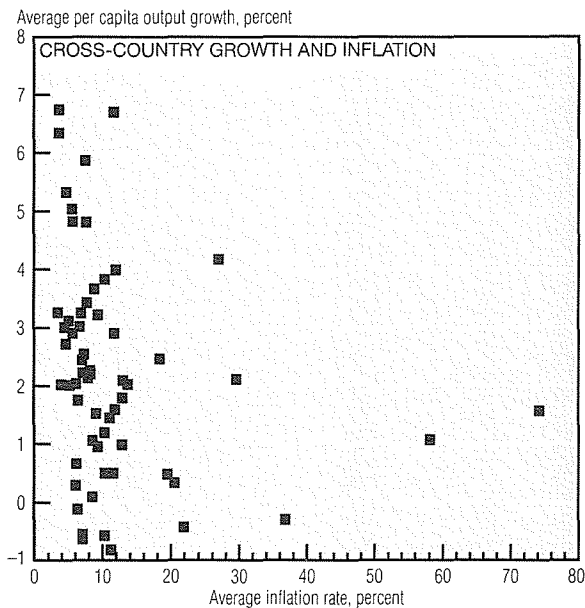
Money demand is also affected by nominal interest rates. As interest rates rise, the opportunity cost of holding money goes up, making people less willing to hold non-interest-bearing cash. When plotted against the one-year Treasury rate, the ratio of the M1 money stock to

nominal GDP reveals a downward-sloping money demand curve, just as theory predicts. Over time, the behavior of real M1 balances is predicted reasonably well by an estimated version of this simple money demand function.

Apart from any effect on unemployment, inflation is harmful because it acts like a tax on real money balances. As prices rise, the real value of money in people's wallets falls, just as if the individual were being taxed. Higher inflation usually leads to higher nominal interest

(continued on next page)

Monetary Policy (cont.)



Summary Statistics across Countries^a (Percent)

High-reserve-requirement countries (12):

Mean reserve requirement ratio	30.0
Mean output growth	1.5

Low-reserve-requirement countries (10):

Mean reserve requirement ratio	3.4
Mean output growth	2.9

High-inflation countries (9):

Mean inflation rate	33.9
Mean output growth	1.2

Low-inflation countries (12):

Mean inflation rate	4.6
Mean output growth	3.9

a. High-reserve-requirement countries are those with average reserve requirement ratios above 26.1%; low-reserve-requirement countries are those with average ratios below 4.5%. High-inflation countries are those with average inflation rates above 18%; low-inflation countries are those with average rates below 5.9%.

NOTE: All data represent 1965–1990 averages for 60 countries.

SOURCE: J. Haslog, "Monetary Policy, Banking, and Growth," Federal Reserve Bank of Dallas, Working Paper 95-15, October 1995.

rates, making people less willing to hold money. Thus, inflation distorts people's behavior and wastes resources as they take steps to avoid the tax.

Tax policy is often viewed as an avenue by which the government can influence economic growth. In general, higher taxes reduce incentives to work and invest, and may contribute to lower growth. It is conceivable, therefore, that monetary policy might affect growth through the inflation tax. A broader notion of monetary policy also includes finan-

cial regulations, which govern the amount of non-interest-bearing reserves that banks must hold against deposits. Higher reserve requirements imply that a larger fraction of the bank's assets are exposed to the inflation tax.

A simple cross-country comparison of average growth rates and inflation suggests, at best, a weak negative association. Countries with higher reserve ratios also seem to experience lower growth rates—and higher inflation rates. This suggests that higher reserve ratios may

amplify the tax aspects of inflation and the potential growth effects of monetary policy.

The historical perspective for the U.S. is less supportive of an inflation–growth connection. Data over the last 100 years reveal that the trend of per capita growth has been surprisingly stable despite tremendous changes, such as the inception of the federal income tax, the founding of the Federal Reserve System, and the occurrence of large swings in inflation during the 1970s and 1980s.