

An Introduction to Monetary Policy

Overview: There are three questions of primary interest in this introduction to monetary policy.

1. What does the Federal Reserve actually do when it changes monetary policy?
 - a. We should understand the relationship between banks and the Federal Reserve. We start by looking at the balance sheets of the banking system and the Federal Reserve.
 - b. On a day-to-day basis, the Federal Reserve conducts monetary policy by buying and selling government bonds in the open market.
 - c. The immediate effect of open market purchases and sales is a change in the interest rate that commercial banks pay to borrow reserve funds. That rate is called the Federal Funds Rate.

2. Are there limits to the ability of monetary policy to affect the economy?
 - a. The consensus view is that monetary policy has short-run but not long-run effects on output and that inflation is highly correlated with excess money growth.
 - b. The data support the consensus view.

3. To the extent that monetary policy does affect the economy, why does it do so?
 - a. Monetary policy works changing levels of spending on goods and services.
 - b. There is no doubt that the Fed can set and hit targets for short-maturity interest rates.
 - c. Monetary policy is thought to affect spending through several channels.
 - d. Why the effects of monetary policy are short-run rather than long-run.

1. What does the Federal Reserve actually do when it changes monetary policy?

- a. To begin, we must understand the relationship between banks and the Federal Reserve. We start by looking at the balance sheets of the banking system and the Federal Reserve.

Balance Sheet of the U.S. Commercial Banks (The first entry is \$B; the second is the item's fraction of Total Commercial Bank Assets) October, 2003 (H.8)					
Loans and Leases	4109	0.60	Transactions Deposits	610	0.09
Securities	1647	0.24	Non-transaction Deposits	3877	0.57
Cash Assets	318	0.05	Borrowings	1338	0.20
Other	759	0.11	Other	534	0.08
			Capital (Assets - Liabilities)	474	0.07
Total	6833		Total	6833	

The data are from Federal Reserve Statistical Release H.8 which is available on the Board of Governors web page.

- C Notice that the cash assets of banks are much smaller than the transaction deposits.
- C The Federal Reserve requires that banks hold cash reserves equal to at least 10 percent of transactions balances although banks may choose to hold more.
- C Banks that need additional cash in order to satisfy reserve requirements can borrow so called "federal funds" from banks that have more than needed to meet reserve requirements.

Balance Sheet of the Federal Reserve Banks (The first entry is \$B; the second is the item's fraction of Total Commercial Bank Assets) November 12, 2003 (H.4)					
Gold and Special Drawing Rights	13.2	0.02	Federal Reserve Notes	706.4	0.92
U.S. Treasury Securities	660.2	0.86	Deposits of Depository Institutions	9.5	0.01
Loans to Depository Institutions	52.0	0.07	Other	34.8	0.05
Other Assets	45.5	0.06	Capital (Assets - Liabilities)	20.2	0.03
Total Assets	770.9		Total	770.9	

The data are from Federal Reserve Statistical Release H.4 which is available on the Board of Governors web page.

- C The Fed holds a large portfolio of government bonds accounting for 86% of its assets.
 - C The Fed conducts gold transactions on behalf of the United States.
 - C The Fed loans funds to depository institutions to preserve the liquidity of the monetary system.
 - C The largest liability of the Federal Reserve is Federal Reserve notes (US fiat money)
 - C Commercial banks keep deposits at the Fed which count as bank reserves.
- b. On a day-to-day basis, the Federal Reserve conducts monetary policy by buying and selling

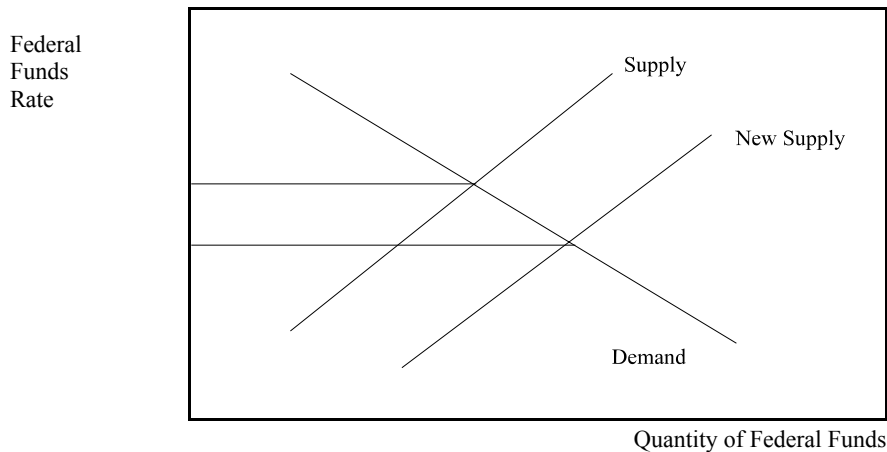
government bonds in the open market.

Balance Sheet Effects of a One Billion Dollar Purchase of Bonds by the Fed

Federal Reserve		Bond Traders		Commercial Banks	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
+ 1B Treasury Bonds	+ 1B Deposit in Account of CB	+ 1B Deposit at CB - 1B T Bonds		+ 1B Deposit at Fed	+ 1B Deposit in Account of Bond Trader

- C When the Fed purchases government bonds, it creates bank reserves.
- C When the Fed sells government bonds, it destroys bank reserves.
- c. The immediate effect of open market purchases and sales is a change in the interest rate that commercial banks pay to borrow reserve funds. That rate is called the Federal Funds Rate.

**When the Fed Purchases Government Bonds on the Open Market
It Increases the Supply of Bank Reserves
and Lowers the Federal Funds Rate**



2. Are there limits to the ability of monetary policy to affect the economy?

a. The consensus view of economists is that:

- (1) Monetary policy can not alter the long-run path of real output and income. The shape of the long-run path is governed by forces that determine the productivity of the economy. These include the evolution of work-force education, forces that contribute to the creation of inventions, the existence of secure property rights and other forms of beneficial infrastructure.
- (2) Monetary policy can alter the short-run path of real output and income. Easy monetary policy stimulates economy-wide demand for goods and services. Tight money policy de-stimulates economy-wide demand for goods and services.
- (3) The rate of inflation in a nation is, in the long-run, equal to the rate of money growth in excess of the growth rate of real income and output. Most economists believe that the U.S. economy has a long run growth rate of 2-3 percent per year. If the Fed were to increase the money supply by 10 per cent per year and continue this policy year after year, economists believe that the inflation rate would converge to 7-8 percent per year.
- (4) The Fed faces a trade off. In the short-run, it can stimulate the economy by buying bonds, increasing the money supply, and lowering the federal funds rate. However, if the Fed provides too much stimulus or provides stimulus at the wrong time, the inflation rate may increase. If the Fed permits the inflation rate to remain high for several months, it runs the risk that the higher inflation rate will be “built into” wage contracts and become harder to reverse.

b. What do the data show?

- (1) The hypothesis of a constant growth rate for real output per capital is in good agreement with the data.
- (2) Since 1965, the US has experienced periods of high and low inflation.
- (3) Looking across countries, there is very substantial correlation between money growth and inflation. Countries with sustained high rates of money growth experience high inflation rates.
- (4) Since 1965, the US has experience periods of high and low rates of interest. There has also been substantial variation in the real rate of interest.

3. To the extent that it does, why does monetary policy affect the economy?
- a. Monetary policy works in the short run by affecting the willingness of decision makers to change their levels of spending on goods and services.
 - b. There is no doubt that the Fed can set and hit targets for short-maturity interest rates.
 - c. Monetary policy is thought to affect spending through several channels.
 - (1) Interest rate channel: A decrease in short-maturity interest rates tends to spill over to long-maturity rates as agents who now receive a smaller return for holding short-maturity assets substitute longer maturity assets. As agents buy more long-maturity assets their prices rise and yields fall.

As long-maturity rates fall, firms tend to raise capital investment and households tend to raise purchases of houses and consumer durable goods such as cars. There is evidence that auto purchases are particularly sensitive to the cost of financing the purchase.
 - (2) Credit Channel: When the Fed lowers interest rates, banks and lenders may respond not only by lowering loan rates but also by accepting a broader pool of applicants. When the Fed raises interest rates, banks and lenders may make qualifying for a loan more difficult.
 - (3) Wealth Channel: When the Fed lowers interest rates, equity prices tend to rise (other factors unchanged). As decision makers observe the value of their stock holdings increasing, they may “feel” wealthier and increase spending.
 - (4) Government Borrowing Cost Channel: When the Fed lowers interest rates, governments can refinance debt at a smaller cost.
 - d. One reason that the effects of changes in monetary policy on output and real economic activity are temporary rather than permanent is that increased spending translates into increased output as long as costs of production and prices stay relatively constant. After a period of sustained high demand, workers tend to raise wage demands and firms tend to raise prices. Once this happens, most of the increased spending is absorbed by higher prices and little by higher real activity.