The Federal Reserve

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For more information
DeBoer’s Indiana Local Government Information Website:
www.agecon.purdue.edu/crd/Localgov
The goals of monetary policy are spelled out in the Federal Reserve Act, which specifies that the Board of Governors and the Federal Open Market Committee should seek “to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates.”

Federal Reserve Board, Monetary Policy and the Economy. [www.federalreserve.gov/pf/pdf/pf_2.pdf]

Monetary Policy Tools of the Federal Reserve

- **Discount Rate**: interest rate charged banks when they borrow from the Fed. A higher discount rate tends to increase interest rates generally.

- **Open Market Operations**: buying and selling short-term Treasury bonds from and to banks and other investors. When the Fed buys bonds, it pays with newly created money. Lenders then have more to lend, and interest rates tend to fall. Selling bonds has the opposite effect. The interest rate most affected by open market operations is known as the federal funds rate, which is the interest rate that banks charge each other for overnight loans.

- **Required Reserve Ratio**: changing the minimum percentage of bank deposits that must be kept as reserves. Increasing the reserve requirement reduces the share of deposits that banks can lend. Interest rates increase.

- **New Tools**: during the 2008-09 financial crisis, open market operations were used to drive the federal funds rate to near zero. These included auctions of money to lenders (the winner pledged the highest interest rate); loans to non-bank institutions, such as commercial businesses; purchases of long-term Treasury bonds and other non-traditional assets.

How Monetary Policy Affects the Economy

- **Interest rates affect borrowing decisions of businesses and consumers.** When interest rates are lower, more business investment projects look profitable, so more investment is undertaken. More consumers can afford to borrow and buy houses, cars and other big ticket items. The increased spending on goods and services gives business a reason to produce more, and to hire more employees.

- **Interest rates influence exchange rates.** When international investors wish to lend in the United States, they must first acquire dollars in exchange for their own currencies. If U.S. interest rates are higher, the demand for dollars to lend is greater, and this drives up the exchange value of the dollar. Higher exchange values make U.S. exports more expensive to international buyers, and so reduce export spending on U.S. goods and services. Businesses cut back production and hiring.

- **Interest rates influence asset values.** When interest rates are high, bonds and other means of lending are more attractive. Stocks and other assets are less attractive. Stock and asset values fall as they are sold. Households see their wealth decline, and reduce their spending. Businesses cut back production and hiring.
The Taylor Rule and Counter-cyclical Policy: The Fed sets the federal funds rate based on inflation and unemployment rates. When unemployment is high and inflation is low, the Fed raises the federal funds rate. When inflation is high and unemployment is low, the Fed reduces the federal funds rate.

Fed Funds Rate = 1.9241 \times (MPI) + 9.6
R^2 = 0.8365

Taylor Rule: Monetary Policy Index and Federal Funds Rate
What Might Have Happened and What Could Happen

- The *Monetary Base* is the money in bank reserves and in circulation. The Fed controls the monetary base through its policy choices.
- The M-1 *Money Supply* is the money in circulation, bank reserves and bank loans. The difference between the monetary base and the money supply is bank loans. When banks loan more, the money supply is higher.
- The *Money Multiplier* is the ratio of the money supply and the monetary base. It reflects the amount of bank deposits that are reserved, and how much are loaned.
- *Velocity* is the number of times each year that a dollar of the money supply is used to buy or sell goods and services that are counted in GDP.
- *Real Output* is GDP, the production of goods and services, adjusted for inflation.
- The *Price Level* is an index that measures the average price of goods and services in GDP.

The Multiple Expansion of Bank Deposits

\[
\text{Monetary Base} \times \text{Money Multiplier} = \text{Money Supply}
\]

*When banks are pessimistic, they lend less, and the money multiplier declines.*

The Equation of Exchange

\[
\text{Money Supply} \times \text{Velocity} = \text{Real Output} \times \text{Price Level}
\]

*Velocity drops when households and businesses spend less.*
### Money Multiplier and Equation of Exchange: Depression Potential

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<tr>
<th></th>
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<tr>
<td>2007-IV</td>
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#### Change from '09-IV

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#### Avg. Inflation per Year

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Greater central bank independence (from the influence of elected officials) appears to be associated with lower long-term inflation.

In Congress, Bernanke Faces Questions About Inflation

By SEWELL CHAN

WASHINGTON — The Federal Reserve chairman, Ben S. Bernanke, parried tough questions Wednesday about rising gasoline prices in the United States and the soaring cost of food and grains in the emerging world as he defended the central bank’s $600 billion program to shore up the recovery.

[1] Mr. Bernanke said it was “certainly possible” that the Fed might cut short its efforts to loosen credit by buying Treasury bonds, especially if domestic inflation were to flare. But Mr. Bernanke maintained that for now, inflation was comfortably in check despite rising commodity prices overseas.

[2] In his first appearance before House lawmakers since Republicans took control of the chamber last month, they repeatedly tried to draw him into the fierce debate over a looming vote to raise the government’s $14.3 trillion borrowing limit.

But the Fed chairman repeatedly declined to side with one party or the other on what was needed to plug the budget deficit. “Congress is going to have to decide where its values are, whether it wants to raise taxes, whether it wants to cut spending or whether it wants some combination,” Mr. Bernanke said.

The chairman reiterated his view that toying with the debt ceiling — some Republicans want to use the vote to force the Obama administration to make immediate spending cuts — could be disastrous if it resulted in a time-consuming debate that worried debt markets and forced the Treasury to default.

[3] Representative Paul D. Ryan of Wisconsin, the new chairman of the House Budget Committee and a vocal skeptic of the Fed’s bond-buying effort, told Mr. Bernanke: “My concern is that the costs of the Fed’s current monetary policy — the money creation and massive balance sheet expansion — will come to outweigh the perceived short-term benefits.”

Mr. Ryan described “a sharp rise in a variety of key global commodity and basic material prices,” and an increase in interest rates of longer-term Treasury securities. And while conceding that American consumers were not yet experiencing substantially higher prices, Mr. Ryan warned that “the inflation dynamic can be quick to materialize and painful to eradicate once it takes hold.” Mr. Ryan all but accused Mr. Bernanke of devaluing the dollar, saying, “There is nothing more insidious that a country can do to its citizens than debase its currency.”

[4] Mr. Bernanke said the rise in commodity prices was mostly “a result of the very strong demand from fast-growing emerging market economies, coupled, in some cases, with constraints on supply.” He did not mention China by name, but he has in the past. He added that overall inflation was “still quite low” and that longer-term inflation expectations, which can influence short-term changes in prices, were stable.

[5] In 2010, a closely watched measure of inflation, the price index for personal consumption expenditures, rose by 1.2 percent, compared with 2.4 percent in 2009. And core inflation, which excludes the food and energy prices, was 0.7 percent in 2010, compared with around 2.5 percent in 2007. Wages rose only 1.7 percent last year.
Mr. Bernanke also denied printing money to finance government borrowing, saying, “What we’re doing here is a temporary measure that will be reversed.” Eventually, the Fed sells the bonds it acquires.

While part of the historically large deficits of the last two years stem from the government’s responses to the recession, Mr. Bernanke said the budget would remain on an unsustainable path even as the economy improved because of an aging population and rising health care costs. Though Mr. Bernanke did not take sides on the most volatile questions of fiscal policy — whether to cut military spending, change entitlement programs like Medicare and raise personal income tax rates — he did offer lawmakers some suggestions.

He told Representative Betty McCollum, a Minnesota Democrat, that Congress should close myriad corporate tax loopholes and then lower the corporate tax rate. He told Representative Mike Honda, a California Democrat, that wise investments in education, including community colleges and on-the-job training, were essential to lowering unemployment.

The chairman also offered some of his most detailed comments to date on what he called China’s “counterproductive policy” of undervaluing its currency, the renminbi. “They have an inflation problem, and the way they’re addressing it is not by raising their currency value, which would reduce the demand for their exports,” he told Representative Tim Ryan, an Ohio Democrat. “Rather, they are leaving it where it is, and they are instead trying to reduce domestic demand through higher interest rates. And it would seem like a better strategy would be to let domestic demand be what it is and let people enjoy a higher standard of living in China, and reduce their exports via a higher exchange rate.”

On Tuesday, China raised interest rates for the third time since October, and many economists in Asia expect that China will do so again this year.

Mr. Bernanke said the Fed was prepared to start raising interest rates when the time came. “Just like a quarterback has to lead a receiver,” he told Representative James Lankford, an Oklahoma Republican, the Fed has to begin tightening monetary policy before inflation becomes a problem. But Representative Todd Rokita, Republican of Indiana, said the Fed had a poor track record in that regard. “Can you name one time in your agency’s history where you got it right, where you got on the brakes in time to correct runaway inflation?” he asked.

Mr. Bernanke pointed to his predecessor Paul A. Volcker, who crushed inflation in the early 1980s by sharply raising interest rates. But Mr. Rokita said the Fed had not acted in time.

As Mr. Bernanke spoke, Representative Ron Paul, a Texas Republican, held his own hearing to lambast the Fed.

“There is a great recovery going on,” said Mr. Paul, who has advocated abolishing the Fed and now leads a Financial Services subcommittee that oversees the Fed. “But the people don’t feel that way.”

The Fed did not take part in the hearing, at which three experts testified.