

## ECON 206 MACROECONOMIC ANALYSIS

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Chapter # 11a

## Where is the NY Fed?

33 Liberty Street, 2 blocks northeast of Wall Street



## Monetary Policy and the Phillips Curve (1 of 2)

Chapter 11

## What will we find at the NY Fed?



Possibly the **largest** gold repository in the world

## Our objectives today

- Monetary Policy: what is it, and who does it?
- The central bank — in the U.S., that's the Federal Reserve — effectively sets the real interest rate
- This will show up as the **MP Curve**, and it will intersect the IS Curve and determine short-run output
- Next time, we'll put all the pieces together: the Phillips Curve, the IS Curve, and the MP Curve

## What else is at the NY Fed?

•These folks (from sometime in the 1970s) are in line to **purchase government bonds** at the New York Federal Reserve Bank's open market window

•These days, people don't stand in line anymore; they buy or sell bonds online or over the phone!

•But this picture, and not the gold repository, explains the modern relevance of the Federal Reserve

•The NY Fed was selling bonds to the public in this picture. Why? What result would that have?



## First, what is the Federal Reserve?

• It is a system of 12 regional banks, of which the NY Fed is the largest in terms of assets, and a Board of Governors in Washington, DC

• U.S. banking has a long, odd history dating back to Alexander Hamilton (a proud New Yorker buried at Trinity Church off Wall St.)

• In 1913, Woodrow Wilson signed the Federal Reserve Act into law, which "provided for the establishment of Federal Reserve Banks, to furnish an elastic currency, to afford means of rediscounting commercial paper, to establish a more effective supervision of banking in the United States, and for other purposes."



## How do Open Market Operations work?

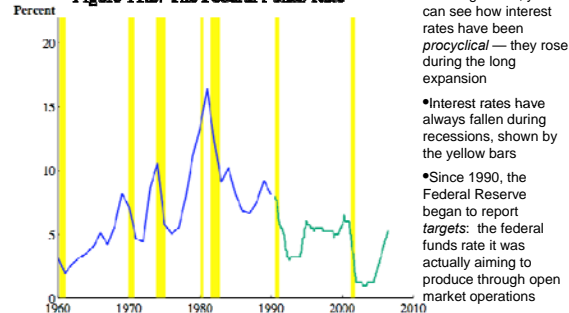
1. The Fed Board of Governors decides to conduct them
2. They instruct the Open Market Window at the New York Fed either to buy or sell government bonds
3. Market interest rates, including the federal funds rate, fall when the New York Fed buys bonds, or rise when the NY Fed sells bonds
  - Why does this happen? You can see it either of two ways:
    - By selling bonds, the Fed absorbs banks' excess reserves, which are then in shorter supply and hence more costly — so banks charge each other a higher *federal funds interest rate*. Buying bonds produces the reverse effect
    - The price of a bond is inversely related to its yield, a.k.a. interest rate, so when the Fed buys bonds, the demand for bonds rises, which increases their prices and *lowers interest rates* — when the Fed sells bonds, the supply of bonds rises, lowering their prices and *raising interest rates*

## In fact, the objectives of the Federal Reserve System are now a little broader

- In 1978, Jimmy Carter signed the Humphrey-Hawkins Full Employment and Balanced Growth Act
  - Among other things, this law directed the Federal Reserve to conduct monetary policy that controlled **inflation** and promoted full **employment** — the first time the real economy was formally linked to monetary policy in law
- How can the Fed carry out these directives? So far in the course, what have we seen associated with banks and credit markets?
  - The money supply determines **inflation** in the long run — that's the *quantity theory of money* — and the Fed manages the money supply
  - In the long run, employment and GDP are determined by capital, labor, and technology/productivity/ideas. Fostering efficient credit markets is something the Fed does (and others do) through oversight ...
  - In the short run? We have seen that activity responds to interest rates

## How have interest rates changed over business cycles (booms and busts)?

Figure 11.2: The Federal Funds Rate



• Especially in the booming 1960s, you can see how interest rates have been *procyclical* — they rose during the long expansion

• Interest rates have always fallen during recessions, shown by the yellow bars

• Since 1990, the Federal Reserve began to report *targets*: the federal funds rate it was actually aiming to produce through open market operations

## In the short run, the Fed can affect interest rates, and thus the real economy

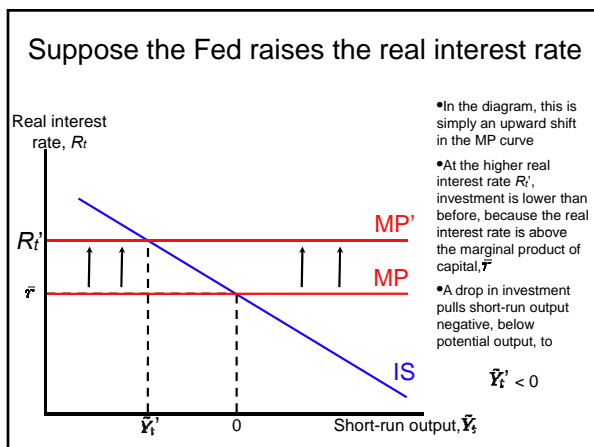
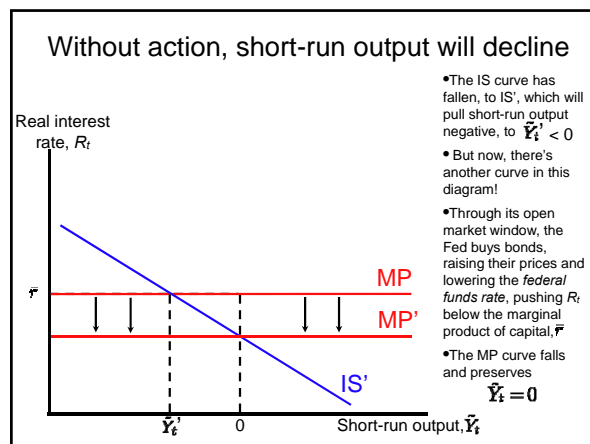
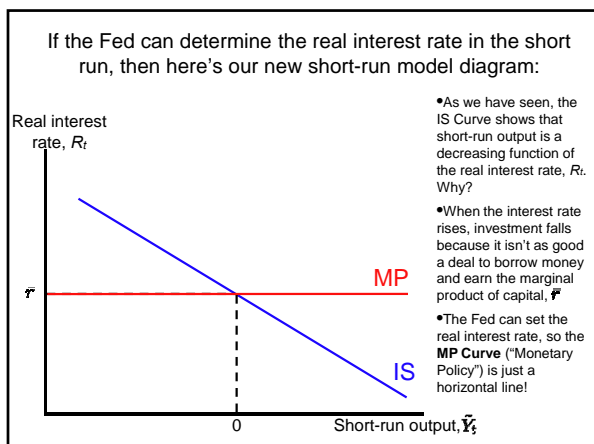
- How might this work?
- Banks have to hold **reserves** to back up their deposits
- Maybe they need 10% of their deposits in the form of reserves at any one time, to meet withdrawal demand
- Sometimes banks need to *borrow* to meet this reserve requirement
- Whom do they borrow from? Other banks, through the market for *federal funds*, or from the Fed itself, through the *discount window*
- The Fed can directly set the interest rate it charges at its discount window — a.k.a. **the discount rate**
- It turns out the Fed can also affect the *federal funds rate* also, through **open market operations**, which are done by the New York Federal Reserve, right across the East River! This is the picture of the guys waiting in line we saw earlier

## So the Fed can affect *nominal interest rates*. What about the **real** interest rate?

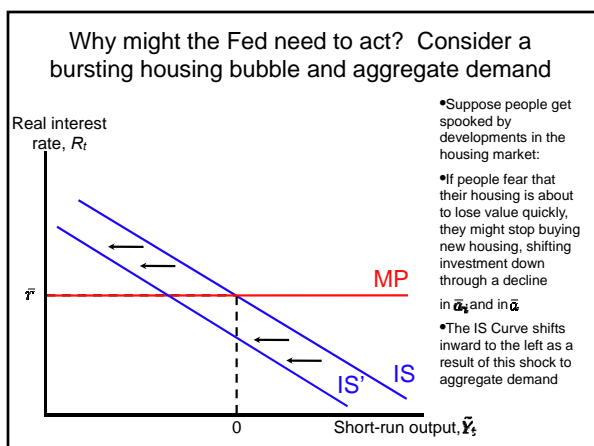
- We know that the nominal interest rate,  $i_t$ , is related to the real interest rate,  $R_t$ , through the Fisher equation:

$$R_t = i_t - \pi_t$$

- So changes in the nominal interest rate will lead to changes in the real interest rate unless perfectly offset by changes in inflation
- Does inflation change? Sure, but generally *not in the short run*. This will be a key assumption of ours, and it's basically right: inflation will not change over short periods of time, like 6 months or so



- Great! Why doesn't the Fed do this all the time? Why do we ever have recessions at all?
- A big part of the problem is just identifying **when** we have a problem to solve with monetary policy!
  - Many other issues the Fed must confront are similarly fuzzy
  - Even if we had perfect knowledge, another problem are lags in effects: changes in interest rates today may not affect anything for 6-18 months!
  - *Another problem is that a pattern of activist policy may affect inflation.* We'll talk about inflation next time



- ## Next time
- More on Chapter 11: Monetary Policy and the Phillips Curve
  - The second part of the title: the Phillips Curve and how everything works in the complete short-run model