Economics of Financial Markets – Lecture 11

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Learning Objectives

From Chapter 17:

- Define and recognize the importance of a **nominal anchor**.
- Identify the **six potential goals** that monetary policymakers may pursue
- Summarize the distinctions between **hierarchical** and **dual mandates**
- Interpret and assess **the performance of the Taylor rule** as a **hypothetical policy instrument** for setting the federal funds rate.

Monetary Policy Tools of the Central Bank

- Open market operations
  - Main refinancing operations
    - Weekly reverse transactions
  - Longer-term refinancing operations
- Lending to banks
  - Marginal lending facility/marginal lending rate
  - Deposit facility

Monetary Policy Tools of the Central Bank

- Reserve Requirements
  - 2% of the total amount of checking deposits and other short-term deposits (in the case of Europe)
  - Pays interest on those deposits so cost of complying is low

The Price Stability Goal and the Nominal Anchor

- Over the past few decades, policy makers throughout the world have become increasingly aware of the social and economic costs of inflation and more concerned with maintaining a stable price level as a goal of economic policy.
- The role of a **nominal anchor**: a nominal variable, such as the inflation rate or the money supply, which ties down the price level to achieve price stability
- A nominal anchor promotes price stability by tying inflation expectations to low levels directly through its constraint on the value of domestic money.
- The **time-inconsistency problem**: monetary policy conducted on a discretionary, day-by-day basis leads to poor long-run outcomes.

Other Goals of Monetary Policy

- Five other goals are continually mentioned by central bank officials when they discuss the objectives of monetary policy:

1. High employment and output stability
2. Economic growth
3. Stability of financial markets
4. Interest-rate stability
5. Stability in foreign exchange markets

Should Price Stability Be the Primary Goal of Monetary Policy?

- Hierarchical Versus Dual Mandates:
  - **Hierarchical mandates** put the goal of price stability first, and then say that as long as it is achieved other goals can be pursued
  - **Dual mandates** are aimed to achieve two coequal objectives: price stability and maximum employment (output stability)
- Price Stability as the Primary, Long-Run Goal of Monetary Policy
  - Either type of mandate is acceptable as long as it operates to make price stability the primary goal in the long run but not the short run.

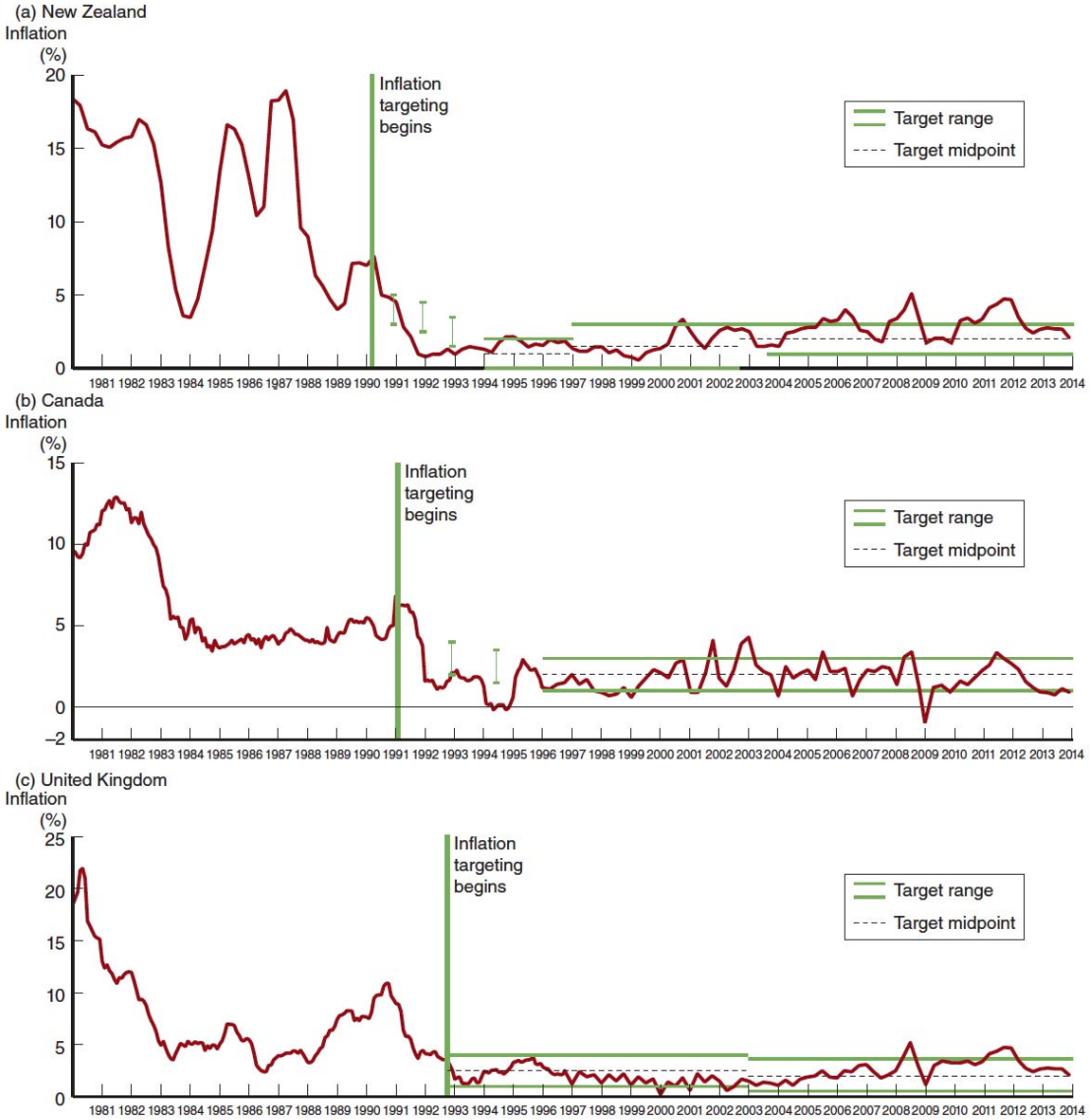
Inflation Targeting

- Public announcement of medium-term numerical target for inflation
- Institutional commitment to price stability as the primary, long-run goal of monetary policy and a commitment to achieve the inflation goal
- Information-inclusive approach in which many variables are used in making decisions
- Increased transparency of the strategy
- Increased accountability of the central bank

Inflation Targeting

- New Zealand (effective in 1990)
  - Inflation was brought down and remained within the target most of the time.
  - Growth has generally been high and unemployment has come down significantly.
- Canada (1991)
  - Inflation decreased since 1991; some costs in term of unemployment
- United Kingdom (1992)
  - Inflation has been close to its target.
  - Growth has been strong and unemployment has been decreasing.

Figure 1 Inflation Rates and Inflation Targets for New Zealand, Canada, and the United Kingdom, 1980–2014



Inflation Targeting

- Advantages:
  - Does not rely on one variable to achieve target
  - Easily understood
  - Reduces potential of falling in time-inconsistency trap
  - Stresses transparency and accountability
- Disadvantages:
  - Delayed signaling
  - Too much rigidity
  - Potential for increased output fluctuations
  - Low economic growth during disinflation

The Evolution of the Federal Reserve's Monetary Policy Strategy

- The United States has achieved excellent macroeconomic performance (including low and stable inflation) until the onset of the global financial crisis without using an explicit nominal anchor such as an inflation target.
- History:
  - Fed began to announce publicly targets for money supply growth in 1975
  - Paul Volker (1979) focused more in nonborrowed reserves
  - Greenspan announced in July 1993 that the Fed would not use any monetary aggregates as a guide for conducting monetary policy

The Evolution of the Federal Reserve's Monetary Policy Strategy

- There is no explicit nominal anchor in the form of an overriding concern for the Fed.
- Forward looking behavior and periodic "preemptive strikes"
- The goal is to prevent inflation from getting started.

The Evolution of the Federal Reserve's Monetary Policy Strategy

- Advantages
  - Uses many sources of information
  - Demonstrated success

- Disadvantages
  - Lack of accountability
  - Inconsistent with democratic principles

The Fed's "Just Do It" Monetary Policy Strategy

- Advantages of the Fed's "Just Do It" Approach:
  - forward-looking behavior and stress on price stability also help to discourage overly expansionary monetary policy, thereby ameliorating the time-inconsistency problem

- Disadvantages of the Fed's "Just Do It" Approach:
  - lack of transparency; strong dependence on the preferences, skills, and trustworthiness of the individuals in charge of the central bank

Lessons for Monetary Policy Strategy from the Global Financial Crisis

1. Developments in the financial sector have a far greater impact on economic activity than was earlier realized.

2. The zero-lower-bound on interest rates can be a serious problem.

3. The cost of cleaning up after a financial crisis is very high.

4. Price and output stability do not ensure financial stability.

Lessons for Monetary Policy Strategy from the Global Financial Crisis

- How should Central banks respond to asset price bubbles?
  - **Asset-price bubble**: pronounced increase in asset prices that depart from fundamental values, which eventually burst.
- Types of asset-price bubbles
  - **Credit-driven bubbles**
    - Subprime financial crisis
  - **Bubbles driven solely by irrational exuberance**

Should central banks respond to bubbles?

- Strong argument for not responding to bubbles driven by irrational exuberance
- Bubbles are easier to identify when asset prices and credit are increasing rapidly at the same time.
- Monetary policy should not be used to prick bubbles.

Should central banks respond to bubbles?

- **Macropudential policy**: regulatory policy to affect what is happening in credit markets in the aggregate.
- **Monetary policy**: Central banks and other regulators should not have a laissez-faire attitude and let credit-driven bubbles proceed without any reaction.

Tactics: Choosing the Policy Instrument

- **Tools**
  - Open market operation
  - Reserve requirements
  - Discount rate
- **Policy instrument (operating instrument)**
  - Reserve aggregates
  - Interest rates
  - May be linked to an intermediate target
- **Interest-rate and aggregate targets are incompatible (must chose one or the other)**.

Figure 2 Linkages Between Central Bank Tools, Policy Instruments, Intermediate Targets, and Goals of Monetary Policy

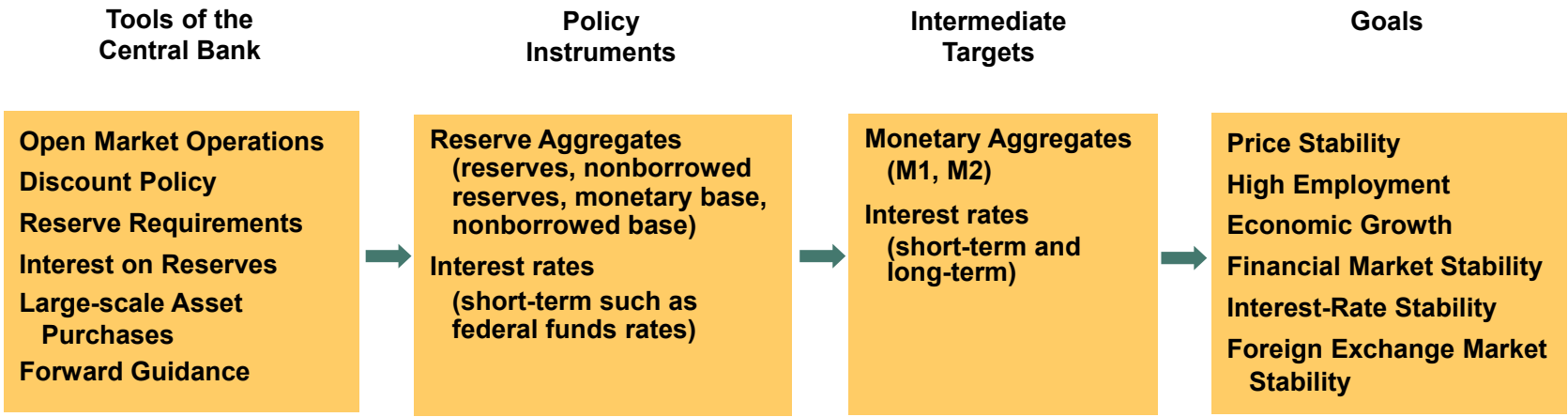
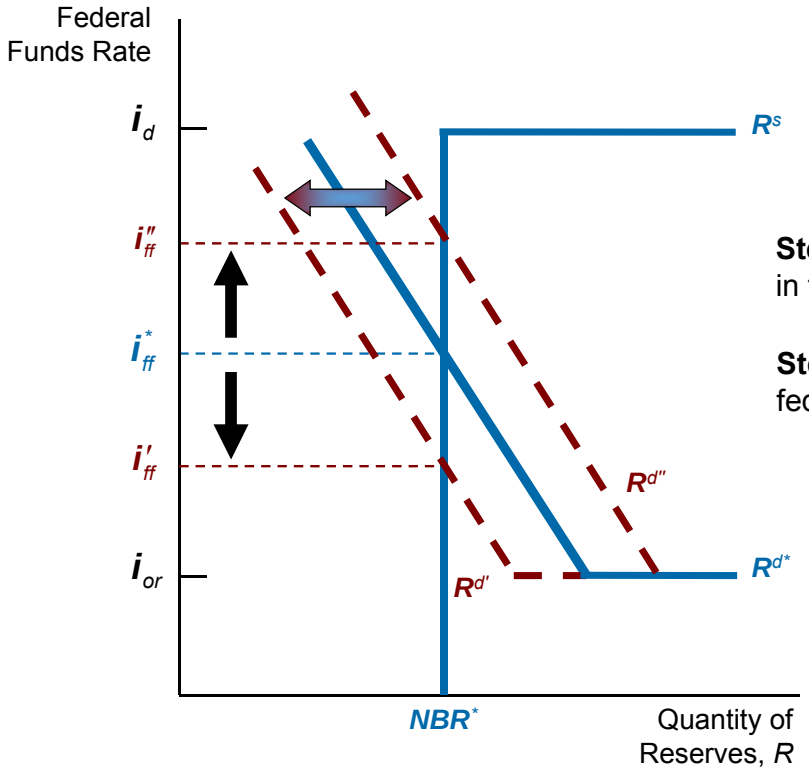


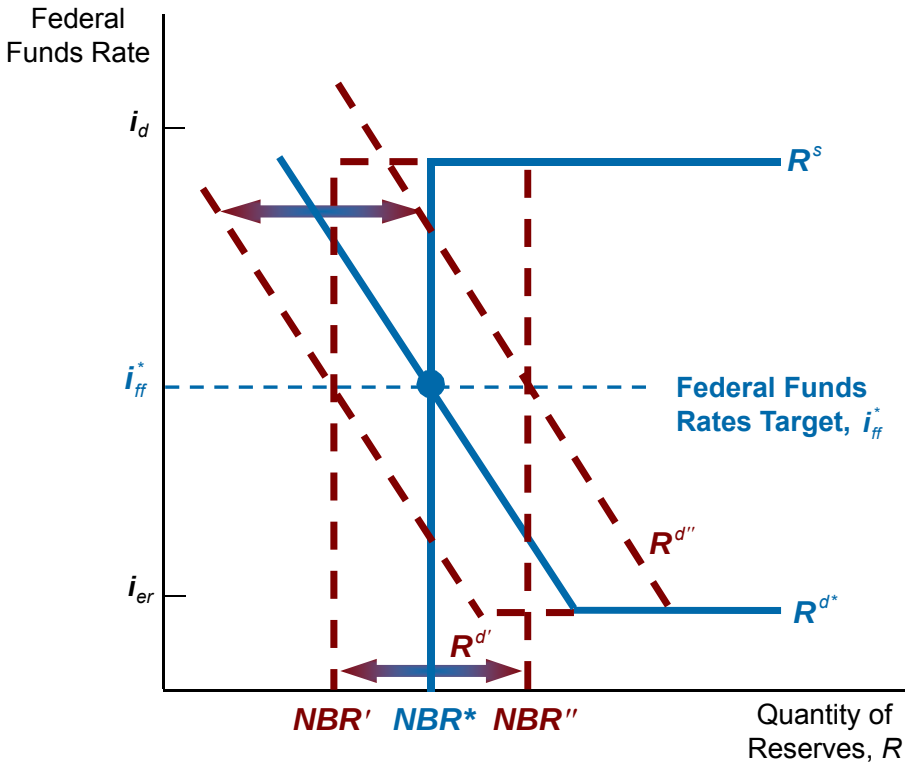
Figure 3 Result of Targeting on Nonborrowed Reserves



Step 1. A rightward or leftward shift in the demand curve for reserves …

Step 2. leads to fluctuations in the federal funds rate between i'_{ff} and i''_{ff}.

Figure 4 Result of Targeting on the Federal Funds Rate



Step 1. A rightward or leftward shift in the demand curve for reserves…

Step 2. lead the central bank to shift the supply curve of reserves so that the federal rate does not change…

Step 3. with the result that non-borrowed reserves fluctuate between NBR'_{ff} and NBR''_{ff}.

Criteria for Choosing the Policy Instrument

- Observability and Measurability
- Controllability
- Predictable effect on Goals

Phillips curve and NAIRU

- Phillips curve theory indicates that changes in inflation are influenced by the state of the economy relative to its productive capacity, as well as to other factors.

- This productive capacity can be measured by potential GDP, which is a function of the natural rate of unemployment, the rate of unemployment consistent with full employment.

- A related concept is the **NAIRU**, the **nonaccelerating inflation rate of unemployment**, the rate of unemployment at which there is no tendency for inflation to change.

- Simply put, the theory states that when the unemployment rate is above NAIRU with output below potential, inflation will come down, but if it is below NAIRU with output above potential, inflation will rise.

Tactics: The Taylor Rule

$$\text{Federal funds rate target} =$$
$$\text{inflation rate} + \text{equilibrium real fed funds rate}$$
$$+1/2\ (\text{inflation gap}) + 1/2\ (\text{output gap})$$

- **An inflation gap and an output gap**
  - Stabilizing real output is an important concern
  - **Output gap** is an indicator of future inflation as shown by Phillips curve
- **NAIRU (Nonaccelerating inflation rate of unemployment)**
  - Rate of unemployment at which there is no tendency for inflation to change

Example: The Taylor Rule

- Taylor has assumed that

1. the equilibrium real fed funds rate is 2% and
2. that an appropriate target for inflation would also be 2%, with equal weights of 1/2 on the inflation and output gaps.

- For an example of the Taylor rule in practice suppose that

1. the inflation rate was at 3%, leading to a positive inflation gap of 1% (3% - 2%), and
2. Real GDP was 1% above its potential, resulting in a positive output gap of 1%.

- Then the Taylor rule suggests that the federal funds rate should be set at

6% = [3% inflation + 2% equilibrium real fed funds rate + 1/2 (1% inflation gap) +1/2 (1% output gap)].

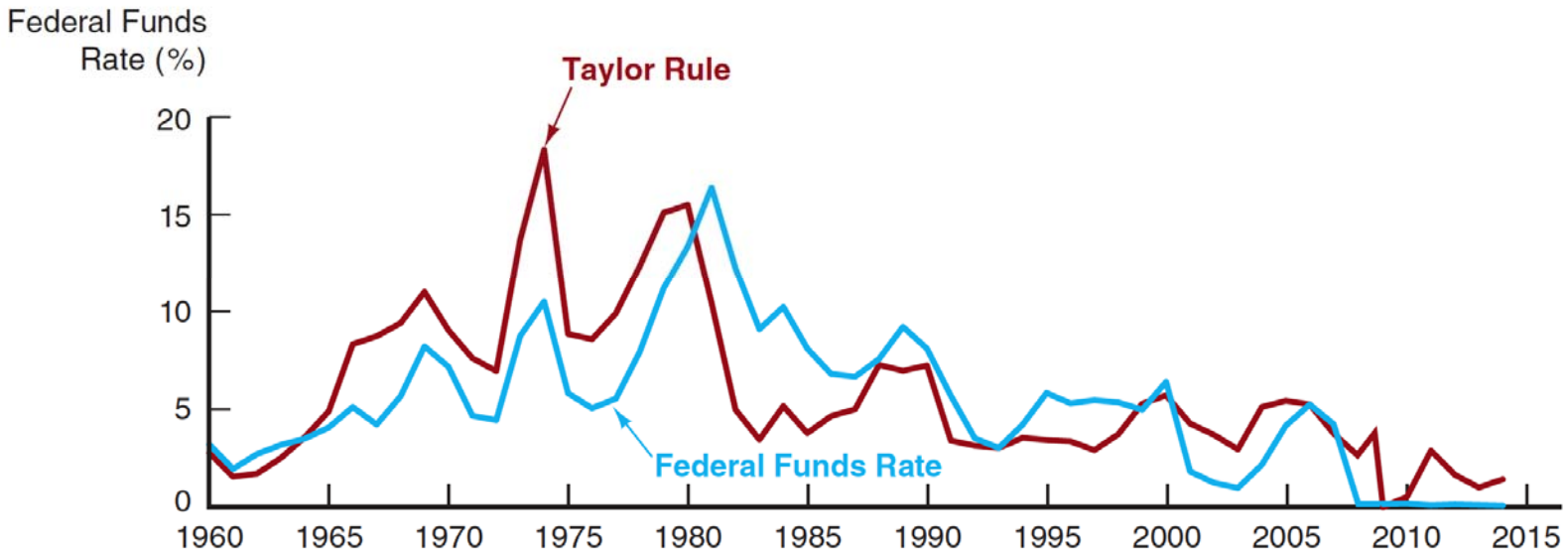
Taylor Rule

- The Taylor rule indicates the federal funds rate should be set equal to the inflation rate plus an “equilibrium” real fed funds rate plus a weighted average of two gaps: (1) an inflation gap and (2) an output gap.

Taylor Rule

- Unemployment rises due to a recession.
  - **Answer:** If unemployment rises, this would lower the output gap, and trigger a lower fed funds rate according to the Taylor rule.
- The economy experiences prolonged increases in productivity growth while actual output growth is unchanged.
  - **Answer:** Prolonged increases in productivity growth would increase potential output, and with the same rate of actual output growth this would cause the output gap to decline, resulting in a decline in the fed funds rate according to the Taylor rule.
- The Fed revises its (implicit) inflation target downward.
  - **Answer:** If the inflation target is revised downward, this would increase the inflation gap at any given inflation rate. This would result in a higher fed funds rate according to the Taylor rule.

Figure 5 The Taylor Rule for the Federal Funds Rate, 1970-2014



Source: Federal Reserve Bank of St. Louis, FRED database: http://research.stlouisfed.org/fred2/.