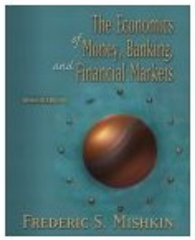
ECON 354
Money and Banking

Professor Yamin Ahmad

Lecture 8

- Goals of Monetary Policy
- Targets of Monetary Policy
- Active vs. Passive Policy
- Rules vs. Discretion



Big Concepts

- Goals for Monetary Policy
- Monetary Policy Targets
  - Monetary Target?
  - Interest Rate Target?
- Think about two questions:
  - Should policy be active or passive?
  - Should policy be conducted by rules or discretion?

Note: These lecture notes are incomplete without having attended lectures

Instruments, Goals, Targets, and the Fed's Performance

To discuss monetary policy we distinguish among:

- Instruments: Recall instruments are
  - Open market operations
  - The discount rate
  - Required reserve ratios
- Goals: The goals of monetary policy are the Fed's ultimate objectives and are
  - Price level stability
  - Sustainable real GDP growth close to potential GDP
- Intermediate targets

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Goals of Monetary Policy

Other Goals:

1. Price Stability
2. Economic Growth
3. High Employment
4. Interest Rate Stability
5. Financial Market Stability
6. Foreign Exchange Market Stability

⇒ ***Goals often in conflict***

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Key Goals of Monetary Policy

- Price Level Stability
  - Unexpected swings in the inflation rate bring costs for borrowers and lenders and employers and workers.
- What Is Price Level Stability?
  - Alan Greenspan defined price level stability as a condition in which the inflation rate does not feature in people's economic calculations.
  - An inflation rate between 0 and 3 percent a year is generally seen as being consistent with price level stability.

Key Goals of Monetary Policy

- Sustainable Real GDP Growth
  - Natural resources and the willingness to save and invest in new capital and new technologies limit sustainable growth.
  - Monetary policy can contribute to potential GDP growth by creating a climate that favors high saving and investment rates.
  - Monetary policy can help to limit fluctuations around potential GDP.

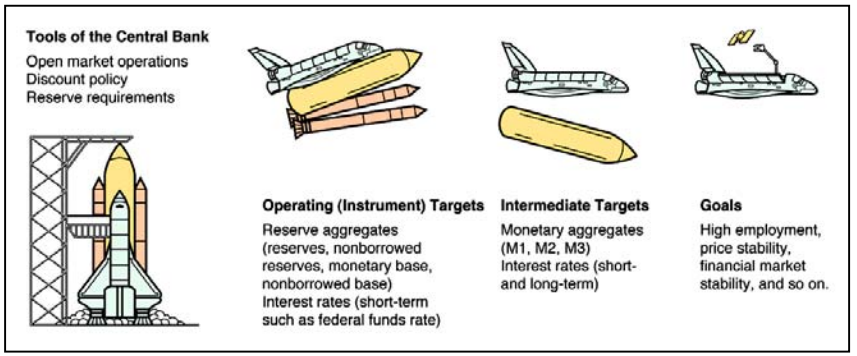
Instruments, Goals and Targets

The Fed's instruments work with an uncertain, long, and variable time lag.

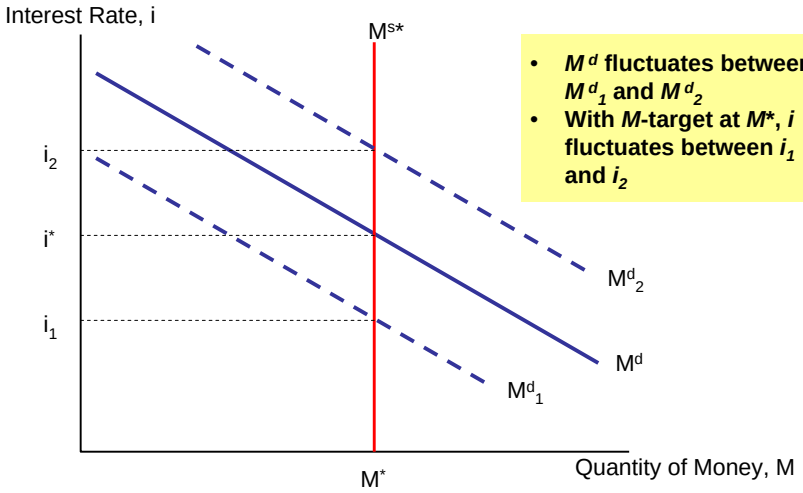
To assess its actions, the Fed watches intermediate targets.

- The possible intermediate targets are
  - Monetary aggregates (M1 and M2, the monetary base - Money supply targets)
  - The federal funds rate
- The Fed's intermediate target is the federal funds rate.

Central Bank Strategy: An Analogy



Money Supply Target



- ***M*** ^{d} **fluctuates between** ***M*** $^{d}_{1}$ **and** ***M*** $^{d}_{2}$
- **With *M*-target at *M****, ***i*** **fluctuates between** i_1 **and** i_2

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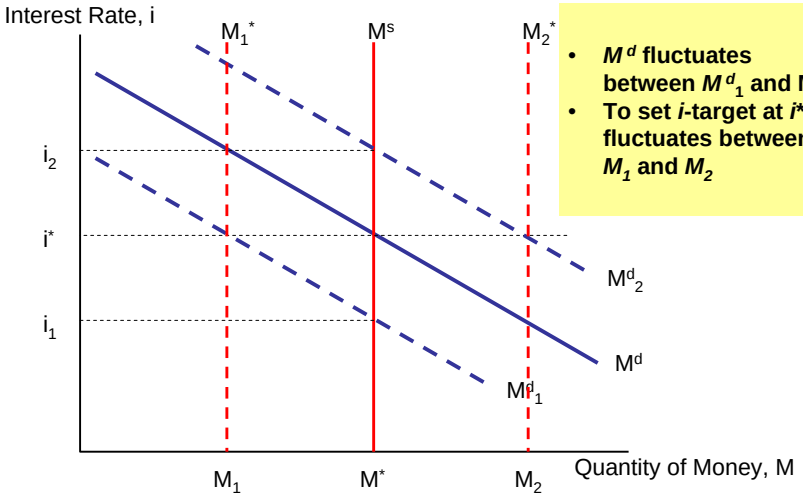
Interest Rate Target



- ***M*** ^{d} **fluctuates between** ***M*** $^{d}_{1}$ **and M** $^{d}_{2}$
- **To set *i*-target at *i* M*** ^{s} **fluctuates between** M_1 **and** M_2

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Criteria for Choosing Targets

Criteria for Intermediate Targets

1. Measurability
2. Controllability
3. Ability to predictably affect goals

Interest rates aren't clearly better than M^S on criteria 1 and 2 because hard to measure and control <u>real</u> interest rates

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Criteria for Operating Targets

Same criteria as above:

1. Measurability
2. Controllability
3. Ability to predictably affect goals

- Reserve aggregates and interest rates about equal on criteria 1 and 2. For 3, if intermediate target is M^S, then reserve aggregate is better

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Recent Fed Policy Procedures

Targeting Monetary Aggregates: 1970s

- Fed funds rate as operating target with narrow band
- Procyclical *M*

  $Y \uparrow \Rightarrow i \uparrow \Rightarrow MB \uparrow \Rightarrow M \uparrow$

  $\pi \uparrow \Rightarrow \pi^e \uparrow \Rightarrow i \uparrow \Rightarrow MB \uparrow \Rightarrow M \uparrow$

New Operating Procedures: 1979–82

- Deemphasis on fed funds rate
- Nonborrowed reserves operating target
- Fed still using interest rates to affect economy and inflation

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Deemphasis of Monetary Aggregates: 1982–Early 1990s

- Borrowed reserves (*DL*) operating target
  - Procyclical *M*

    $Y \uparrow \Rightarrow i \uparrow \Rightarrow DL \uparrow \Rightarrow MB \uparrow \Rightarrow M \uparrow$

Fed Funds Targeting Again: Early 1990s to the present

- Fed funds target now announced

International Considerations

- *M* ↑ in 1985 to lower exchange rate, *M* ↓ in 1987 to raise it
- International policy coordination

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Question 1:

Should policy be active or passive?

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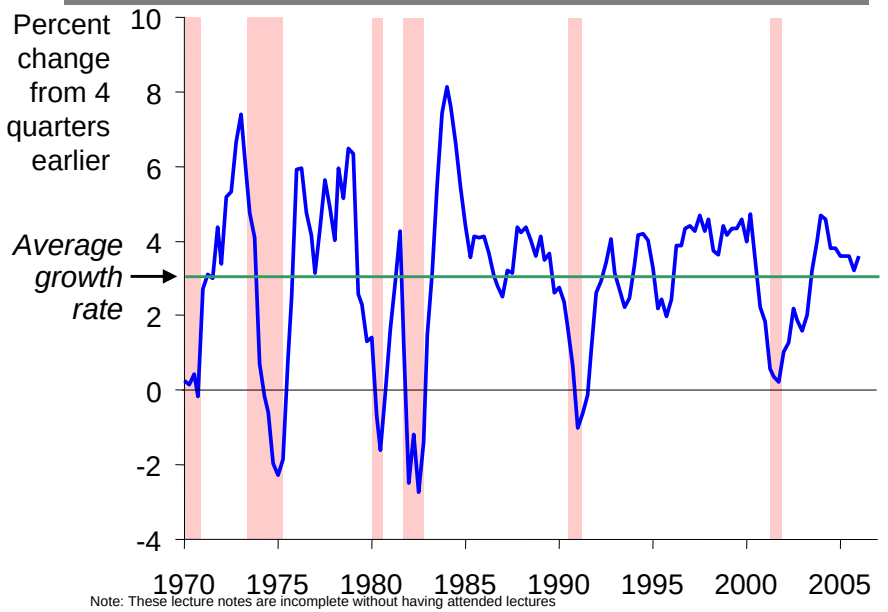
Growth rate of real GDP, 1970-2006



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Increase in unemployment during recessions

peak	trough	increase in no. of unemployed persons (millions)
July 1953	May 1954	2.11
Aug 1957	April 1958	2.27
April 1960	February 1961	1.21
December 1969	November 1970	2.01
November 1973	March 1975	3.58
January 1980	July 1980	1.68
July 1981	November 1982	4.08
July 1990	March 1991	1.67
March 2001	November 2001	1.50

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Arguments for active policy

- Recessions cause economic hardship for millions of people.
- The Employment Act of 1946:
  "It is the continuing policy and responsibility of the Federal Government to…promote full employment and production."
- The AD-AS model shows how fiscal and monetary policy can respond to shocks and stabilize the economy.

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Arguments against active policy

Policies act with long & variable lags, including:

Inside (implementation) lag:
the time between the shock and the policy response.

- takes time to recognize shock
- takes time to implement policy, especially fiscal policy

Outside (effectiveness) lag:
the time it takes for policy to affect economy.

If conditions change before policy's impact is felt, the policy may destabilize the economy.

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Automatic stabilizers

- Definition:
  policies that stimulate or depress the economy when necessary without any deliberate policy change.
- Designed to reduce the lags associated with stabilization policy.
- Examples:
  - income tax
  - unemployment insurance
  - welfare

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Forecasting the macroeconomy

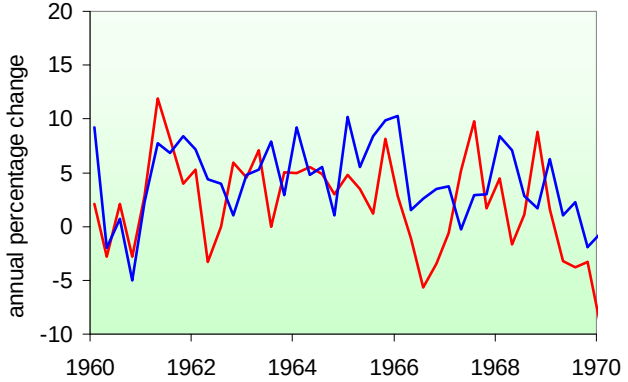
Because policies act with lags, policymakers must predict future conditions.

Two ways economists generate forecasts:

- *Leading economic indicators*
  data series that fluctuate in advance of the economy
- *Macroeconometric models*
  Large-scale models with estimated parameters that can be used to forecast the response of endogenous variables to shocks and policies

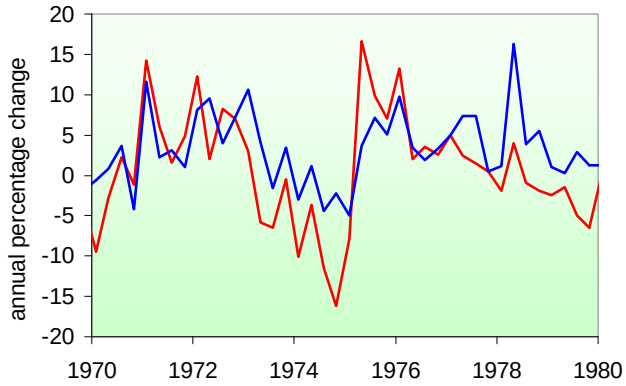
The LEI index and real GDP, 1960s

The *Index of Leading Economic Indicators* includes 10 data series



source of LEI data:
The Conference Board

The LEI index and real GDP, 1970s



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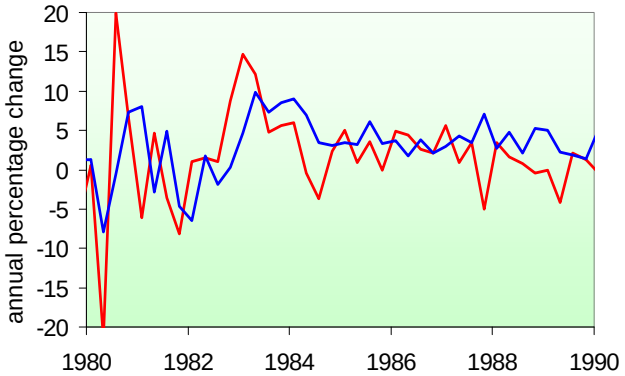

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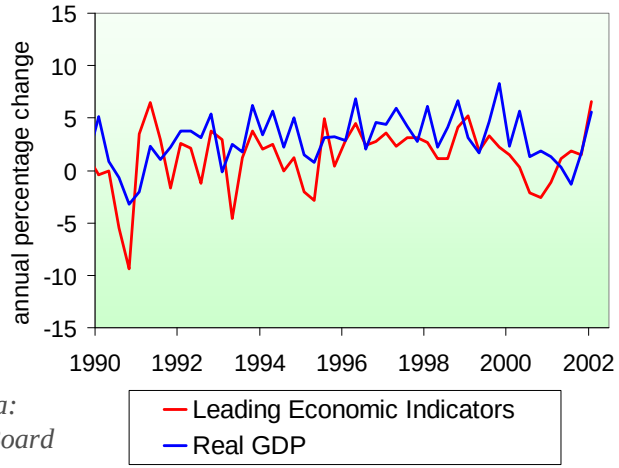
The LEI index and real GDP, 1990s



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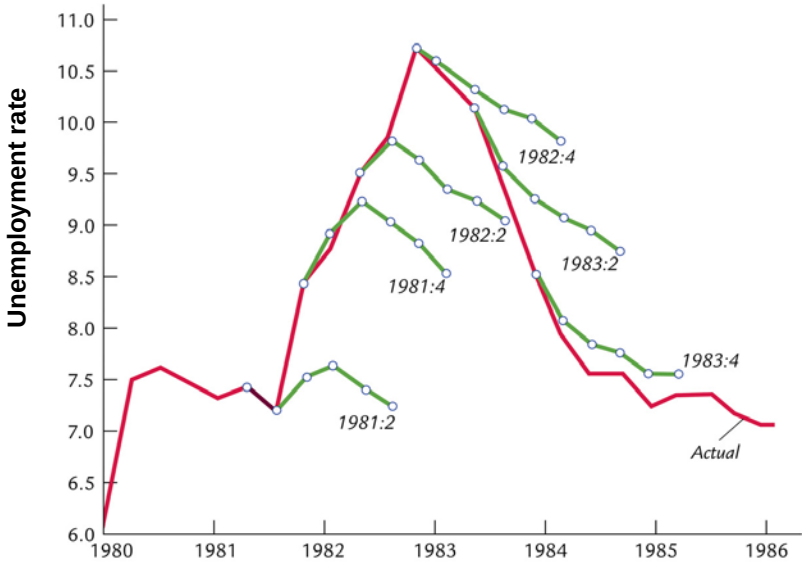
Mistakes forecasting the 1982 recession



Forecasting the macroeconomy

Because policies act with lags, policymakers must predict future conditions.

The preceding slides show that the forecasts are often wrong.

This is one reason why some economists oppose policy activism.

The Lucas critique

- Due to Robert Lucas who won Nobel Prize in 1995 for rational expectations.
- Forecasting the effects of policy changes has often been done using models estimated with historical data.
- Lucas pointed out that such predictions would not be valid if the policy change alters expectations in a way that changes the fundamental relationships between variables.

An example of the Lucas critique

- Prediction (based on past experience):
  An increase in the money growth rate will reduce unemployment.
- The Lucas critique points out that increasing the money growth rate may raise expected inflation, in which case unemployment would not necessarily fall.

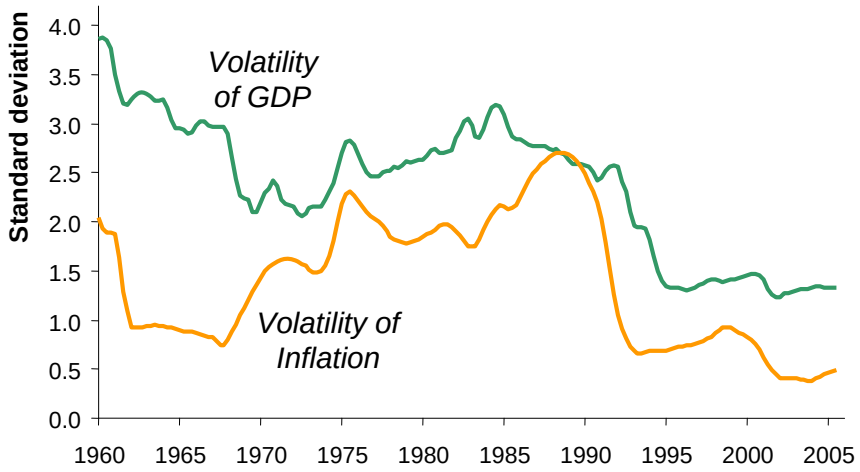
The Jury's out…

Looking at recent history does not clearly answer Question 1:

- It's hard to identify shocks in the data.
- It's hard to tell how things would have been different had actual policies not been used.

Most economists agree, though, that the U.S. economy has become much more stable since the late 1980s…

The stability of the modern economy



Question 2:

Should policy be conducted by rule or discretion?

Rules and discretion: Basic concepts

- *Policy conducted by rule:*
  Policymakers announce in advance how policy will respond in various situations, and commit themselves to following through.

- *Policy conducted by discretion:*
  As events occur and circumstances change, policymakers use their judgment and apply whatever policies seem appropriate at the time.

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Arguments for rules

1. Distrust of policymakers and the political process
   - misinformed politicians
   - politicians' interests sometimes not the same as the interests of society

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Arguments for rules

2. **The time inconsistency of discretionary policy**
   - Def: A scenario in which policymakers have an incentive to renege on a previously announced policy once others have acted on that announcement.

   - Destroys policymakers' credibility, thereby reducing effectiveness of their policies.

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Examples of time inconsistency

1. To encourage investment,
   govt announces it will not tax income from capital.

   … But once the factories are built,
   govt reneges in order to raise more tax revenue.

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Examples of time inconsistency

2. To reduce expected inflation,
the central bank announces it will tighten monetary policy.

… But faced with high unemployment,
the central bank may be tempted to cut interest rates.

Examples of time inconsistency

3. Aid is given to poor countries contingent on fiscal reforms.

The reforms do not occur, but aid is given anyway, because the donor countries do not want the poor countries' citizens to starve.

Monetary policy rules

a. Constant money supply growth rate
   - Advocated by monetarists.
   - Stabilizes aggregate demand only if velocity is stable.

Monetary policy rules

a. Constant money supply growth rate

b. Target growth rate of nominal GDP
   - Automatically increase money growth whenever nominal GDP grows slower than targeted; decrease money growth when nominal GDP growth exceeds target.

Monetary policy rules

a. Constant money supply growth rate

b. Target growth rate of nominal GDP

c. Target the inflation rate
   - Automatically reduce money growth whenever inflation rises above the target rate.
   - Many countries' central banks now practice inflation targeting, but allow themselves a little discretion.

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Monetary policy rules

a. Constant money supply growth rate

b. Target growth rate of nominal GDP

c. Target the inflation rate

d. The **Taylor rule**:
   Target the federal funds rate based on
   - inflation rate
   - gap between actual & full-employment GDP

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The Taylor Rule

$$i_{ff} = \pi + 2 + 0.5(\pi - 2) - 0.5(\text{GDP gap})$$

where

i_{ff} = nominal federal funds rate target

$$\text{GDP gap} = 100 \times \frac{\overline{Y} - Y}{\overline{Y}}$$

= percent by which real GDP is below its natural rate

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The Taylor Rule

$$i_{ff} = \pi + 2 + 0.5(\pi - 2) - 0.5(\text{GDP gap})$$

- If $\pi = 2$ and output is at its natural rate, then fed funds rate targeted at 4 percent.
- For each one-point increase in π, mon. policy is automatically tightened to raise fed funds rate by 1.5.
- For each one percentage point that GDP falls below its natural rate, mon. policy automatically eases to reduce the fed funds rate by 0.5.

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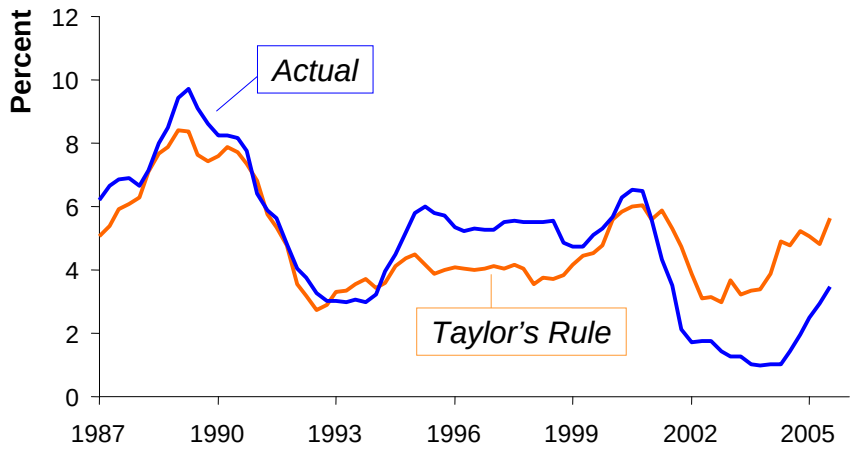
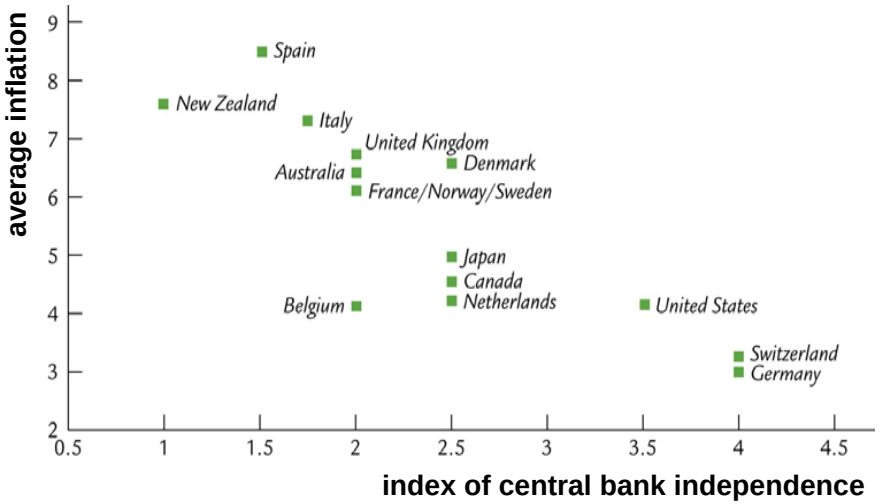
The federal funds rate: Actual and suggested



Central bank independence

- A policy rule announced by central bank will work only if the announcement is credible.
- Credibility depends in part on degree of independence of central bank.

Inflation and central bank independence



The Fed's Performance: 1973–2003

- The Fed's performance depends on
  - ➢ Shocks to the price level
  - ➢ Monetary policy actions

The Fed's Performance: 1973–2003

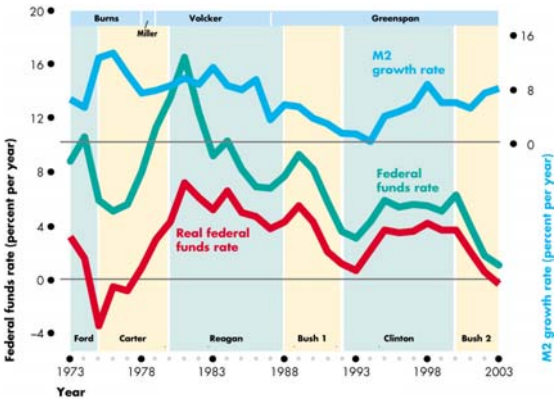
- Shocks to the price level during the 1970s and 1980s made the Fed's job harder
  - World oil price hikes
  - Large and increasing budget deficits
  - Productivity slowdown
- These shocks intensified inflation and slowed real GDP growth.

The Fed's Performance: 1973–2003

- Shocks in the 1990s made the Fed's job easier.
  - Falling world oil prices
  - Decreasing budget deficits (and eventually a budget surplus)
  - New information economy brought more rapid productivity growth.

The Fed's Performance: 1973–2003

Figure below summarizes monetary policy 1973-2003.



Instruments, Goals, Targets, and the Fed's Performance

Figure 5 provides a neat way of showing how well the Fed has done in shooting at its target.