Monetary Policy Control

- Intermediate targets:
  - The Fed uses *intermediate targets* to guide policy as a step between its tools and its goals or ultimate targets of price stability and stable economic growth.

Agenda

- Monetary Policy Control
  - Intermediate targets
  - Making monetary policy in practice
- Rules versus Discretion
Monetary Policy Control

- Intermediate targets:
  - The Fed cannot target both the money supply and the Fed funds rate simultaneously.
  - Suppose both the money supply and the Fed funds rate were above target, so the Fed needs to lower them.
  - Since a decrease in the money supply shifts the $LM$ curve up, it will increase the Fed funds rate.
  - In recent years, the Fed has been targeting the Fed funds rate.

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- Intermediate targets:
  - **Interest rate targeting** works well if the main shocks to the economy are to the $LM$ curve
    - Shocks to money supply or money demand.
  - This strategy stabilizes output, the real interest rate, and the price level because it completely offsets any shocks to the $LM$ curve.

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Interest rate targeting with LM shocks

![Diagram](https://example.com/diagram.png)

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- Intermediate targets:
  - However, if the shocks come to the economy are from the IS curve, then policy may be destabilizing.
    - Unless the Fed changes its target Fed funds rate.
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• Intermediate targets:

  ➢ Suppose a shock shifts the IS curve to the right.

  • If the Fed were to maintain the real interest rate, it would increase the money supply, thus making output rise even more, which would be destabilizing.

  • Instead, the Fed needs to raise the real interest rate to stabilize output.

Interest rate targeting with IS shocks

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• Intermediate targets:

  ➢ Suppose a shock shifts the IS curve to the right.

  • Research suggests that the optimal Fed funds rate varies substantially over time.
    – This implies that IS curve shocks overwhelm LM curve shocks.

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• Making monetary policy in practice:

  ➢ The IS-LM model makes monetary policy look easy—just change the money supply to move the economy to the best position possible.

  • Two issues make it much harder in practice:
    – Time lags in the effect of policy, and
    – Uncertainty about exactly the ways monetary policy affects the economy.
      » These are known as the monetary policy transmission channels.
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• Making monetary policy in practice:
  
  ➢ Lags in the effects of monetary policy.
    
    • It takes a fairly long time for changes in monetary policy to have an impact on the economy.
    
    • Interest rates change quickly, but output and inflation barely respond in the first four months after the change in money growth.

  ➢ These long lags make it very difficult to use monetary policy to control the economy precisely.

  ➢ Because of the lags, policy must be made based on forecasts, but forecasts are often inaccurate.

Responses of output, prices, and the Fed funds rate to a monetary policy shock

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• Making monetary policy in practice:
  
  ➢ Tighter monetary policy causes real GDP to decline sharply after about four months, with the full effect being felt about 16 to 20 months after the change in policy.
  
  ➢ Inflation responds even more slowly, remaining essentially unchanged for the first year, then declining slowly.

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• Making monetary policy in practice:
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• Making monetary policy in practice:

  ➢ The monetary policy transmission channels.

    • How exactly does monetary policy affect economic activity and prices?

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• Making monetary policy in practice:

  ➢ The monetary policy transmission channels:

    • The interest rate channel: in the IS-LM model, a decline in money supply raises real interest rates, reducing aggregate demand, leading to a decline in output and prices.

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• Making monetary policy in practice:

  ➢ The monetary policy transmission channels:

    • The exchange rate channel: in an open economy, tighter monetary policy raises the real exchange rate, reducing net exports, and thus aggregate demand.

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• Making monetary policy in practice:

  ➢ The monetary policy transmission channels:

    • The credit channel: tighter monetary policy reduces both the supply and demand for credit.
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• Making monetary policy in practice:

  ➢ The credit channel: the supply side.

    • A tighter monetary policy reduces lending by banks.
      – Tighter monetary policy reduces bank reserves.
      – Consequently, banks cannot lend as much and
      – Households and firms cannot borrow as much.
      – Consumer spending and business investment will be less, reducing aggregate demand.

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• Making monetary policy in practice:

  ➢ The credit channel: the demand side.

    • A tighter monetary policy makes borrowers less creditworthy.
      – Firms with outstanding debt (with a floating interest rate or short-term loan) has to pay more interest when tight policy makes interest rates rise, so its costs go up and profits decline.
      – With lower profits, firms is more likely to go bankrupt, so banks will be less willing to make loans to them.

Monetary Policy Control

• Making monetary policy in practice:

  ➢ The credit channel: the demand side.

    • A tighter monetary policy makes borrowers less creditworthy.
      – Consumers who use collateral for loans find that tighter monetary policy reduces collateral values, so they cannot borrow as much.

Monetary Policy Control

• Making monetary policy in practice:

  ➢ The credit channel: tighter monetary policy reduces both the supply and demand for credit.

    • The overall effect is reduced consumer and investment spending, shifting the IS curve to the left.
Making monetary policy in practice:

- Empirical evidence for the credit channel.
  - On the supply side, the credit channel was powerful in the 1960s and 1970s, but has declined in importance recently because of deregulation in the banking sector and the elimination of most reserve requirements.

Making monetary policy in practice:

- Empirical evidence for the credit channel.
  - On the demand side, the credit channel can be observed by noting that the spending of consumers and small firms is more sensitive to monetary policy than the spending of large firms.
    - Consumers and small firms are financially riskier than large firms, so when monetary policy tightens they’re more likely to be disqualified from loans.

Making monetary policy in practice:

- The monetary policy transmission channels.
  - How important are these different channels?
    - Suppose real interest rates are high, but the dollar has been falling; is monetary policy tight or easy?
    - Or suppose real interest rates are low, but borrowing and lending are weak; is monetary policy tight or easy?
    - It depends on the relative importance of the different channels.

Making monetary policy in practice:

- These practical difficulties—long and variable policy lags and uncertainty about the relative importance of the monetary policy transmission channels—make monetary policy “an art as well as a science.”
  - Because of these lags and uncertainties, some economists argue the central bank should follow simple rules in the conduct of monetary policy.
Monetarists and classical macroeconomists advocate the use of rules for monetary policy:

- Rules make monetary policy automatic, because they require the central bank to base policy on a set of simple, pre-specified, and publicly announced rules.
- Examples of rules:
  - Increase the monetary base by 1% each quarter.
  - Maintain the price of gold at a fixed level.

Keynesian economists advocate the use of discretion in monetary policy:

- Discretion allows the central bank to look at all the information about the economy and use its judgment as to the best course of monetary policy.
- Discretion gives the central bank the freedom to stimulate or contract the economy when needed; it is thus called activist policy.

Why would anyone suggest that the central bank follow rules when discretion gives the central bank leeway to act in response to changing economic conditions while rules constrain its behavior?
The monetarist case for rules:

- **Monetarism** is an economic theory emphasizing the importance of monetary factors in the economy.
  - The leading monetarist is Milton Friedman, who has argued for many years (since 1959) that the central bank should follow rules for setting policy.
  - Friedman’s argument for rules comes from four main propositions.

**Proposition 1:** Monetary policy has powerful short-run effects on the real economy. However, in the longer run, changes in the money supply have their primary effect on the price level.

**Proposition 2:** Despite the powerful short-run effect of money on the economy, there is little scope for using monetary policy actively to try to smooth business cycles.
  - First, the information lag makes it difficult to know the current state of the economy.
  - Second, monetary policy works with a long and variable lag, so it isn’t clear how to set policy quantitatively.
  - Third, wage and price adjustment is fast enough that by the time a change in policy begins to affect the economy, it may be moving the economy in the wrong direction, thus destabilizing the economy.
**Rules Versus Discretion**

- The monetarist case for rules:
  - *Proposition 3*: Even if there is some scope for using monetary policy to smooth business cycles, the Fed cannot be relied on to do so effectively.
    - Friedman believed the Fed responds to political pressure and tends to stimulate the economy in election years.
    - Historically, monetary policy has tended to destabilize, rather than stabilize, the economy; so eliminating monetary policy as a source of instability would improve macroeconomic performance.

- The Taylor rule:
  - John Taylor introduced a rule that allows the Fed to take into account economic conditions:
    - The rule is:
      $$ i = \pi + 0.02 + 0.5y + 0.5(\pi - 0.02) $$
    - where $i$ is the nominal Fed funds rate, $\pi$ is the inflation rate over the past year, $y$ = the percentage deviation of output from full-employment output.

- The monetarist case for rules:
  - *Proposition 4*: The Fed should choose a specific monetary aggregate and commit to growing that aggregate at a fixed percentage rate every year.
    - Friedman prefers a constant money growth rule because the money supply is controllable by the Fed.
    - To reduce inflation to zero, the money growth target should be gradually lowered over time.

- The Taylor rule:
  - In this rule, the *real Fed funds rate* $(i - \pi)$ respond to:
    - $y$, the difference between output and full-employment output, and/or
    - $\pi - 0.02$, the difference between inflation and its target of 2 percent.
  - If either $y$ or $\pi$ increase, the Fed tightens monetary policy to increase the real Fed funds rate.
• The Taylor rule:
  - Taylor showed that the rule is similar to what the Fed does in practice.
  - Taylor advocates the use of the rule as a **guideline** for policy, not something to be mechanically followed.

• Rules and central bank credibility:
  - New arguments for rules suggest that rules are valuable even if the central bank has a lot of information and forms policy wisely.
    • These new arguments suggest that rules improve the **credibility** of the central bank.
    • The credibility of the central bank influences how well monetary policy works by affecting peoples’ expectations.

• Rules and central bank credibility:
  - Keynesians argue that there may be a trade-off between credibility and flexibility:
    - To be credible, a rule must be nearly impossible to change.
    - If a rule cannot be changed, what happens in a crisis?
      » For example, a rule based on economic relationships that suddenly change, may make the lack of flexibility very costly.
    - So a rule may create unacceptable risks.
Rules Versus Discretion

• Other ways to achieve central bank credibility:
  ➢ Appoint a “tough” central banker:
    • Appoint someone who has a well-known reputation for being tough on inflation.

Rules Versus Discretion

• Other ways to achieve central bank credibility:
  ➢ Changing central bankers’ incentives:
    • People are more likely to believe a central bank is serious about disinflation if the central bank has an incentive to care a lot about inflation.
      – For example, in New Zealand, the head of the central bank must be replaced if inflation targets aren’t met; as a result, inflation was reduced significantly.
        » At a cost of higher unemployment.

Rules Versus Discretion

• Other ways to achieve central bank credibility:
  ➢ Increase central bank independence:
    • People are more likely to believe that the central bank is committed to keeping inflation low if the government cannot interfere with the central bank and cannot create a political business cycle.
      – Evidence shows that the more independent the central bank, the lower the inflation rate.
      – In addition, the long-run level of unemployment is no higher in those countries.

Central bank independence and inflation