
Monetary Policy and the Federal Reserve System, Part 2

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Agenda

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

- Intermediate targets:
 - *Intermediate targets* are variables the Fed cannot directly control but can influence predictably and are related to the Fed's goals.
 - Examples include:
 - The monetary aggregates such as M1 and M2, and
 - Short-term interest rates, such as the Fed funds rate
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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.

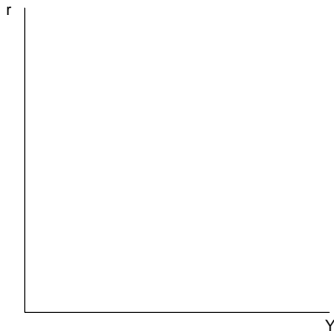
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Monetary Policy Control

- 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



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Monetary Policy Control

- Intermediate targets:
 - However, if the shocks 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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Monetary Policy Control

- 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.

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Interest rate targeting with *IS* shocks



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Monetary Policy Control

- 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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Monetary Policy Control

- 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 effects the economy.
 - » These are known as the monetary policy transmission channels.

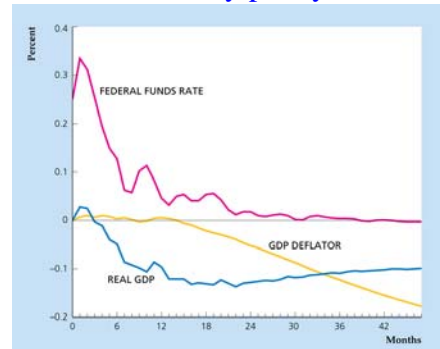
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Monetary Policy Control

- 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.

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



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Monetary Policy Control

- 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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Monetary Policy Control

- Making monetary policy in practice:
 - 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.

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Monetary Policy Control

- Making monetary policy in practice:
 - The *monetary policy transmission channels*.
 - How exactly does monetary policy affect economic activity and prices?

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Monetary Policy Control

- 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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Monetary Policy Control

- 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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Monetary Policy Control

- 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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Monetary Policy Control

- 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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Monetary Policy Control

- 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.

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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.

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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.

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Monetary Policy Control

- 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.

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Monetary Policy Control

- 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.

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Monetary Policy Control

- 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.

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Monetary Policy Control

- 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.

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Rules Versus Discretion

- 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.

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Rules Versus Discretion

- Monetarists and classical macroeconomists advocate the use of rules for monetary policy:
 - The rule should be *simple* with little leeway for exceptions.
 - The rule should specify something under the Fed's *direct control*.
 - The rule may also permit the Fed to respond to the state of the economy.

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Rules Versus Discretion

- Keynesian economists advocate the use of discretion in monetary policy:
 - Discretion allows the central bank 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*.

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Rules Versus Discretion

- 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?

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Rules Versus Discretion

- 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.

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Rules Versus Discretion

- The monetarist case for rules:
 - **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.

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Rules Versus Discretion

- The monetarist case for rules:
 - **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.

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Rules Versus Discretion

- The monetarist case for rules:
 - **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.
 - **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.

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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.

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Rules Versus Discretion

- 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.

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Rules Versus Discretion

- 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, π is the inflation rate over the past year, y = the percentage deviation of output from full-employment output.

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Rules Versus Discretion

- 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 π increase, the Fed tightens monetary policy to increase the real Fed funds rate.

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Rules Versus Discretion

- 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.

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Rules Versus Discretion

- 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.

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Rules Versus Discretion

- Rules and central bank credibility:
 - Rules, commitment, and credibility:
 - How does a central bank gain credibility?
 - One way: build a reputation for following through on its promises, even if it's costly in the short run.
 - Another way: follow a rule that is enforced by some outside agency.

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Rules Versus Discretion

- Rules and central bank credibility:
 - Rules, commitment, and 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.

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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.

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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.

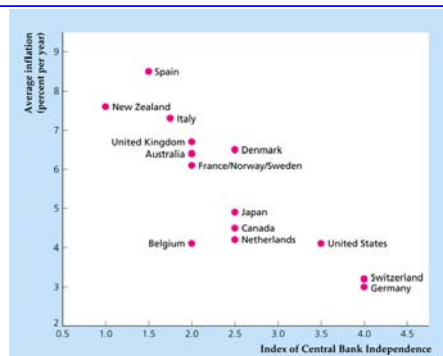
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Rules Versus Discretion

- 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.

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Central bank independence and inflation



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