Monetary Policies Goals, Strategy, and Tactics

All central banks are designated by law to achieve certain goal(s), for example, full employment, stable long-term interest rate, price stability, exchange rate stability, financial stability, etc. Monetary policy tools (OMO, discount lending, required reserve ratios, etc.) are the instruments that central banks utilize in order to attain these goals.

However, the central bank does not target those goals directly, because it usually take a considerable time lag to see the impact of its policy change. It will be too late for the central bank to wait and see the policy effect. As a result, the central bank aims to influence a set of quantitative or price variables that are statistically closely related to the goals to serve as intermediate targets, which usually include monetary aggregates, bank credit, exchange rate, and long-term interest rates.

Once the central bank has identified its intermediate targets, it influences them by targeting the operating targets (policy instruments) which it can better manipulate with its monetary tools. The operating targets should be closely related to the intermediate targets and can also be effectively affected by policy tools. Some examples of operating targets are reserve aggregates (reserves, non-borrowed reserves, monetary base, etc.) and interest rates (interbank loan rates and short-term government security rates).

It is easier for the central bank to aim for the operating and intermediate targets than the goals because it can see the results much faster and judge whether its policies are on the right track. Our discussion will focus on the choice of intermediate targets.

1. The Role of Nominal Anchor

A main feature of monetary policy strategy in all the countries is the use of a nominal anchor (e.g., monetary aggregates, exchange rate, inflation rate, etc.) as an intermediate target to achieve their goal(s).

1.1 Time-Consistency Problem (TCP)

Typically, to maintain price stability a central bank allows a nominal anchor to change

only within a certain target range. A nominal anchor promotes price stability by tying inflation expectations to a low level directly through its constraint on the value of domestic money. How does a nominal anchor work to control inflation expectations? It alleviates the problem of time-consistency.

Consider a rational and forward-looking government that chooses a time plan for policy in order to maximize the well-being of its citizens. Kydland and Prescott (1977) show that if given an opportunity to re-optimize and change its plan at a later date, the government will generally do so. In particular, the government will have incentives to boost the economy by pursuing discretionary monetary policy that is more expansionary than expected. Thus, the discretionary policy is time-consistent, i.e., the policy is what policymakers are likely to be willing to pursue at any given point in time.

A significant upshot is that governments unable to make binding commitments regarding future policies will encounter a credibility problem. Specifically, the public will realize that future government policy will not necessarily coincide with the announced policy, and then they will revise their expectations and their behavior in response to future policies. Therefore, the policy problem should be studied as the outcome of a game, where current and future policymakers are modeled as distinct players. In this game, each player has to anticipate the reaction of future players to current play, i.e., rational expectations are required. They showed that the outcome in a rational-expectations equilibrium where the government cannot commit to policy in advance (discretionary policy) results in lower welfare than the outcome in an equilibrium where the government can commit.

This is because the economic aggregates are influenced by what firms and the public expect the monetary authorities to do in the future. When the public anticipates that the monetary authorities cannot commit to its announced policy, it will lead to a shift of the public's expectations (e.g., future inflation, future benefits of bailout) and change their behaviors accordingly.

Examples: over-expansionary policy to boost the economy, too-big-to-fail, etc.

In light of this time-consistency problem, the nominal anchor serves as a behavior rule that provides a behavior constraint on discretionary policy. This nominal anchor also helps to build up the reputation of the central bank, raising the credibility of the policy announced.

2. Intermediate Targets

Criteria for Intermediate Targets

(1) Intermediate Targets should maintain stable and high correlation with economic activity (GDP, general prices, …) so that these targets have predictable impact on the goals.

(2) The central bank should be able to effectively control the intermediate target.

(3) It is important that the central bank is able to measure changes of these targets easily and quickly.

Recall that the central bank can target the reserve aggregates and the interest aggregates. However, the central bank can only target one of them and not both at the same time. In other words, the central bank cannot control the money supply and the interest rate at the same time. The reason for that is because the demand for money is out of the central bank's control.

2.1. Monetary Targeting

Since 1970s, monetary aggregates had been employed by many countries to serve as an intermediate target. However, the monetary targeting these countries exercise was very different from what M. Friedman recommended that monetary aggregates are to be targeted at a constant rate.

2.1.1. U.S.

(a) In 1970, A. Burns (Fed chairman) started specifying monetary targeting range, using M1 as the intermediate target.

(b) In 1987, the Fed switched to M2 targeting, due to (i) financial innovations and deregulation, which made definition and measurement of money more difficult (e.g., MMMF, Negotiable Order of withdrawal (NOW) accounts); and (ii) there was a breakdown in the stable relationship between M1 and Y, and thus M1 can no longer be a reliable indicator for monetary policy.

(c) A. Greenspan announced the Fed abandoned monetary targeting and switched to

federal funds rate targeting in 1993. Again, it was because the relationship between M2 and output broke down.

2.1.2. U.K.

(a) In 1980, M3 target was introduced, but then soon ran into similar problem as U.S.'s M1 targeting. The monetary target switched to M0 (monetary base).

(b) However, BOE targeted multiple aggregates and frequently overshot the targets.

(c) The Bank of England adopted inflation targeting in 1992.

2.1.3. Germany

(a) The Bundesbank targeted the central bank money" (currency in circulation + bank deposits) in 1974, and switched to M3 in 1988.

(b) In practice, the Bundesbank exercised a flexible monetary targeting, sometimes allowing the growth rates of monetary aggregates to drift outside its target range for a substantial periods of time, in order to focus on long-term control of inflation.

(c) The Bundesbank stresses the importance of transparency in communicating to the public how monetary policy is directed to achieve long-term inflation goals and as a means for increasing accountability.

(d) F. Mishkin argues that the way of conducting monetary policy by the Bundesbank is close to a "hybrid" inflation targeting, because flexibility, transparency, and accountability are important elements of inflation targeting.

2.1.4. Taiwan

See handout "99 年貨幣成長目標區設定說明"

2.1.5. Advantages

(a) The monetary aggregates can be readily observable within a few weeks, and thus send immediate signals about the stance of monetary policy.

(b) Monetary targets also increase accountability to keep inflation expectations low. If

properly executed, it helps contain policymakers from falling into time-consistency trap.

2.1.6 Disadvantages

(a) There must be a strong and reliable relationship between the goal(s) and the targeted monetary aggregate.

(b) The weak relationship later found in several countries (U.S., U.K., Germany, etc.) implies that hitting the target no longer provide an adequate signal about the stance of monetary policy, and will not help fix inflation expectations.

(b) An unreliable relationship between the goal(s) and the targeted monetary aggregate makes it difficult for monetary targeting to serve as a communicative device that helps raise transparency of monetary policy and make the central bank accountable to the public.

3. Inflation Targeting

Given the breakdown of the relationship between monetary aggregates and the goals, some countries adopted inflation targeting, e.g., New Zealand (1990), Canada (1991), UK (1992, and officially in 1997), Sweden and Finland (1993), Australia (1993), European Central Bank (2000).

Several Elements

(1) Public announcement of medium-term numerical target for inflation.

(2) An institutional commitment to price stability as the primary, long-term goal of monetary policy.

(3) An information-inclusive strategy in which many variables are used in making decisions (flexibility).

(4) Increased transparency in monetary policy through communication with the public.

(5) Increased accountability for attaining the inflation target.

3.1. Advantages

(1) No need for the stability relationship between monetary aggregates and inflation or output.

(2) Inflation targeting allows the central bank to use all available information, not just a few variables, for making decisions.

(3) It is readily understood and transparent.

(4) It increases the accountability of a central bank and reduces the hazard of time-consistency problem. This is because inflation targeting helps a central bank to focus on one thing only – control inflation, and this greatly helps alleviate the central bank from political pressure.

3.2. Disadvantages

(1) In general, inflation cannot be easily and directly controlled by the central bank. And there may be a long lag in the effect of monetary policy.

(2) Too much rigidity.

But F. Mishkin argues that inflation targeting, as actually practiced, is far from rigid. Because it allows the central bank to employ all available information to determine what policy actions are appropriate to achieve inflation target. Thus, in practice, inflation targeting allows a substantial degree of discretion.

On the other hand, inflation targeting is a "rule-like" policy strategy, involving forward-looking behavior that limits policymakers from systematically engaging in policy with undesirable long-term consequences and thereby avoiding time-consistency problem.

(3) Potential for increased output fluctuations

F. Mishkin argues that inflation targeting involves a certain degree of discretion, and this allows the central bank to respond to supply shocks (because the target inflation usually focuses on the core inflation, excluding food and energies). Furthermore, all countries set an inflation target well above zero, which implies that these central banks also consider an inflation rate that is too low or even negative may not good for the economy.

4. Monetary Policy with an Implicit Nominal Anchor

Since the Federal Reserve of the US dropped monetary targeting in 1993, the Fed does not have an explicit nominal anchor. Instead, the Fed sets the federal funds rate (the overnight interbank loan rate) to be the operating target.

The main features of federal fund rate targeting are

(1) It involves forward-looking behavior, monitoring for signs of future inflation using a wide range of inflation.

(2) The Fed undertakes "pre-emptive strike" against the potential threat of inflation. Because of time lags in the effect of monetary policy, the Fed cannot wait to respond until the public have revised their inflation expectations.

Mishkin argues that the Fed has behaved as if a flexible inflation targeting. But it has a few steps away from transparency and accountability.

4.1. The Federal Funds Rate Targeting by the Fed

When the Fed announces its new target, it uses OMO to raise or lower the reserves of the banking system in order to affect the overnight interbank loan rate, and thus bring this market interest rate to move toward its new target.

How did the Fed choose this target?

4.2. The Taylor Rule

J. Taylor argues that the Fed had been responding to inflation and output gap. He estimates the reaction function of the Fed.

$$i_t = \bar{i} + \alpha(\pi_t - \pi^*) + \beta(\dot{y}_t - \dot{y}^*) + \varepsilon_t .$$

where α must be greater than one, otherwise, the reaction function is destabilizing regarding the change in inflation rate.

Suppose the estimation result shows that $\alpha = 1.5, \beta = 0.5$. This means that when the inflation rate rises above its inflation target by 1%, then the Fed will raise its federal funds rate target by 1.5%.

5. Evolution of the Fed's Monetary Policy

5.1. Early Years (1913-1920)

When the Fed was initiated in 1913, its primary policy tool was the discount rate. This is because the Fed was conceived as the bankers' bank to provide liquidity for banks.

5.2. Open Market Operation in 1920s

During the recession during 1920-21, discount loans declined substantially. Since the Fed's main source of incomes comes from the interest earnings of discount lending, to raise more incomes the Fed purchased government securities in the market. The Fed then "discovered" that this raised the reserves in the banking system, and monetary aggregates increased more than proportionally. Since then OMO became the primary tool of monetary policy.

5.3. The Great Depression

The Fed raised the discount rate in Aug. 1929 in response to the stock market boom during 1928-29. But this only hastened the stock market crash. The weakness of the economy led to bank panic around Nov. – Dec., 1930.

On March 4th 1933 F. Roosevelt was sworn in as the president of the US and on the 6th of March Roosevelt closed the banks for 4 days by declaring a national bank holiday.

During 1930-33, around one-third of banks in US failed and money supply shrank by 25%. The shrinkage of money supply was considered one of the main factors contributing to the prolonged and deep recession. During 1930-33, however, the Fed was mainly passive in its role as the lender-of last-resort. This may be because it was not well understood at that time how the bank panic might affect money supply and economic activity.

5.4. Reserve Requirement in 1930s

The Banking Act 1935 allowed the Fed to change reserve requirement ratios. The Fed raised the reserve requirement ratio in Aug. 1936, and in Jan. and May of 1937 to control the excess reserves in the banking system. But this dramatically lowered the growth rate of money and led to the recession in 1937-38. The Fed then realized the effect of this monetary tool and was more cautious in using this tool thereafter.

5.5. Second World War and Pegging the Interest Rate

During the Second World War, the Fed pegged the bond interest rate at a low level by adopting open market purchase. This is equivalent to money financing and thus growth rate of money supply increased rapidly.

In 1952, the Fed regained the full control of monetary policy.

5.6. Interest Rate Targeting (The Federal Fund Rate as the Operating Target)

During 1950s and 1960s, the Fed targeted at the money market conditions (i.e., the federal funds rate) by using OMO.

Suppose the current interest rate rises above the target of the Fed, the Fed uses open market purchase to lower the interest rate to the target level. But then this leads the monetary base and monetary aggregates to rise. If the inflation is expected to rise, the nominal interest rate will increase according to the Fisher effect. Thus, the Fed has to engage in a more open market purchase to suppress the interest rate. But this further raises monetary base and pushes up inflation expectations. In sum, this amounts to a procyclical monetary policy.

5.7. Monetary Targeting

In 1970 A. Burns acted a the chairman of the Fed and adopted monetary aggregates as the intermediate target. The Fed set a target range mainly for M1 growth (and for M2 growth as well, but the focus was M1 growth). Moreover, the Fed seemed to use the interest rate as the operating target. However, targeting interest rate and targeting monetary aggregates are incompatible. The lack of commitment led monetary policy

to procyclical as before.

5.8. Monetary Targeting and Non-borrowed Reserves

In Oct. 1987, P. Volcker became the chairman of the Fed. The Fed then turned to non-borrowed reserves as the primary operating target. However, due to financial innovations and deregulation, the Fed frequently missed the M1 growth target during 1979-82.

5.9. De-emphasizing monetary Aggregates (Oct. 1982-early 1990s)

The Fed returned to a policy that smoothes the interest rate, and de-emphasized the monetary aggregates target. In Feb. 1987, the Fed dropped M1 targeting and switched to M2 as the intermediate target. This is because
(1) financial innovations and deregulation have made definition and measurement of money more difficult.
(2) the stable relationship between M1 and output has broken down.

Thus, M1 can no longer serve as a reliable indicator for monetary policy.

In July 1993, A. Greenspan dropped monetary aggregate targeting and returned to federal funds rate targeting.

5.10. Federal Funds Rate Targeting Again

Different from 1950s and 1960s, the Fed stressed forward-looking and pre-emptive strike against a potential rise in inflation.

Since Feb. 1994, the Fed publicly announced its federal funds rate target.

Starting Dec. 16 2008, the Fed switched to a federal funds rate target range [0, 0.25%].