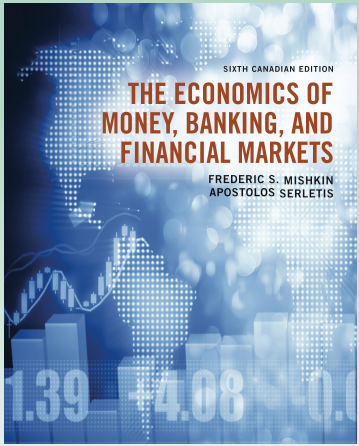
Mishkin/Serletis

The Economics of Money, Banking, and Financial Markets

Sixth Canadian Edition



Chapter 17

The Conduct of Monetary Policy: Strategy and Tactics

Learning Objectives

1. Define and recognize the importance of a nominal anchor
2. Identify the six potential goals that monetary policy makers may pursue
3. Summarize the distinctions between hierarchical and dual mandates
4. Compare and contrast the advantages and disadvantages of inflation targeting
5. Identify the key changes made over time to the Federal Reserve's monetary policy strategy

Learning Objectives (cont'd)

3. List the four lessons learned from the global financial crisis, and discuss what they mean for inflation targeting
2. Summarize the arguments for and against central bank policy responses to asset-price bubbles
5. Describe and assess the four criteria for choosing a policy instrument
4. Interpret and assess the performance of the Taylor rule as a hypothetical policy instrument for setting the federal funds rate

The Price Stability Goal

- Policy makers aware of the social and economic costs of inflation
- Goal of monetary policy is increasingly views as low and stable inflation, which is what central bankers define as **price stability**

- **Nominal Anchor:**
  - *A nominal variable such as the inflation rate or the money supply, which ties down the price level to achieve price stability*

Why is price stability important?

- Inflation creates uncertainty
- Uncertainty interferes with economic growth.
- Uncertainty complicates decision-making by consumers, firms, gov
- Uncertainty reduces efficiency of the financial sys.
- Inflation complicates planning for the future.
- lead to social problems as all groups compete for higher wages

A nominal anchor for monetary policy is a single variable or device which the central bank uses to pin down expectations of private agents about the nominal price level or its path or about what the bank might do with respect to achieving that path.

The Role of a Nominal Anchor

- BoC has an explicit target for inflation 2%.
- BoC takes steps to achieve this target.
- The inflation target is our nominal anchor.
- By promoting price stability, BoC is also promoting low and stable expectations of inflation.

- Another reason is to limit the time-inconsistency problem.

Time-Inconsistency:

Once households and firms have formed their expectations of inflation and set wages and prices, accordingly, the central bank has an incentive to renege on its announcement and implement expansionary monetary policy to reduce unemployment in the short run.

The Time-Inconsistency Problem

- A subtle reason for a nominal anchor's importance is that it can limit the **time-inconsistency problem**
  - *Monetary policymakers tempted to pursue a discretionary monetary policy that is more expansionary to boost economic output (or lower unemployment) in the short run*
  - *Workers and firms raise their expectations about inflation, driving wages and prices up*
  - *Rise in wages and prices will lead to higher inflation, but will not result in higher output*

The Time-Inconsistency Problem.

- It is difficult to consistently follow a plan over time.
- With monetary policy, there is a temptation to pursue an expansionary policy to increase output and decrease unemployment in the short run.
- However, consumers and firms will respond by raising their expectations of inflation, driving up wages and prices.
- Outcome: higher inflation, not higher output.

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*
   - *The **natural rate of unemployment***
2. *Economic growth*
3. *Stability of financial markets*
4. *Interest-rate stability*
5. *Stability in foreign exchange markets*

1. high employment and output stability.

- The benefits are obvious - people are working producing GDP.
- How do we define full-employment?
  - It is not zero unemployment.
  - Zero unemployment ignores the existence of frictional and structural unemployment.
  - A better definition is a rate above zero consistent with equilibrium in the labor market.
  - This level is called the natural rate of unemployment
  - It is estimated to btw 4% - 6%
  - The natural rate of unemployment is attached to the natural rate of output or potential GDP.

2. Economic Growth.

- The supply-side goal of encouraging firms to invest in capital goods and consumers to save.
- A more successful strategy when unemployment is low.
- monetary policy may or may not be successful here

3. Stability of Financial Markets.

- A stable financial sector is beneficial to all aspects of the economy.

4. Interest - Rate Stability.

- Interest rate fluctuations lead to uncertainty.
- Uncertainty will delay or cancel interest-rate sensitive decisions eg: buying a house
- Stable interest rates will support stable financial markets.

5. Stability in Foreign-Exchange Markets.

- Canada is a large trading country
- A stable exchange rate will facilitate trade.
- Monetary Policy should prevent large, volatile changes in the external value of dollar.

Should Price Stability Be the Primary Goal of Monetary Policy?

- Hierarchical Versus Dual Mandates
  - ***Hierarchical mandates*** *put 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*
- 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

Should Price Stability be the Primary Goal of Monetary Policy?

Hierarchical mandate more closely reflects the behavior of BoC.

Dual mandate reflects the policy of the US. Federal reserve.

Inflation Targeting

- Public announcement of medium-term numerical target for inflation is **inflation targeting**
- 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

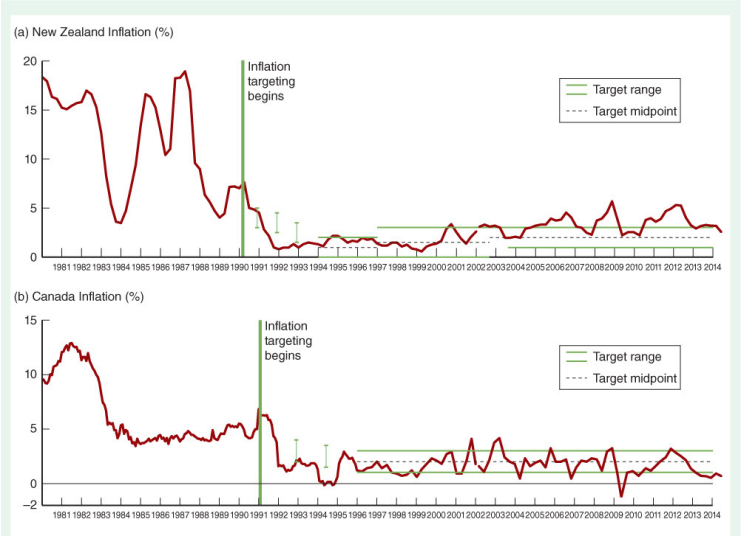
Inflation Targeting involves:

1. A public announcement of the objective eg: 2% inflation target.
2. An institutional commitment to achieve that objective.
3. Use of all revelant material and info to make decisions.
4. Transparency through communication.
5. Holding the BoC accountable for attaining the objective.

Inflation Targeting in New Zealand, Canada, and the United Kingdom

- 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, some costs in term of unemployment*
- United Kingdom (1992)
  - *Inflation has been close to its target.*
  - *Growth has been strong and unemployment decreasing*

Inflation Rates and Inflation Targets for New Zealand, Canada, and the United Kingdom



Inflation Rates and Inflation Targets for New Zealand, Canada, and the United Kingdom (cont'd)

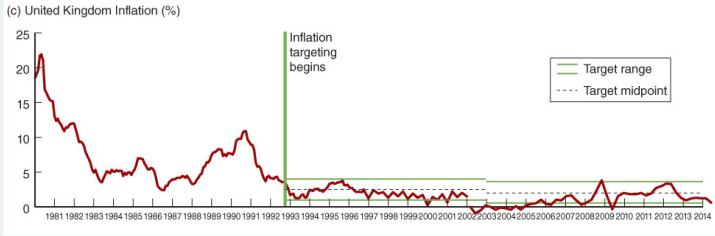


FIGURE 17-1 Inflation Rates and Inflation Targets for New Zealand, Canada, and the United Kingdom, 1980–2014

Inflation-targeting countries have significantly reduced the rate of inflation and eventually have achieved their inflation targets.

Source: Data from Ben S. Bernanke, Thomas Laubach, Frederic S. Mishkin, and Adam S. Poson, Inflation Targeting: Lessons from the International Experience (Princeton: Princeton University Press, 1999); and Federal Reserve Bank of St. Louis, FRED database: http://research.stlouisfed.org/fred2/

Inflation Targeting

- Advantages
  - *Reduces potential of falling in time-inconsistency trap*
  - *Stresses transparency and accountability*
  - *Consistent with democratic principles*
  - *Improved performance*

- Disadvantages
  - *Delayed signaling*
  - *Too much rigidity*
  - *Potential for increased output fluctuations*
  - *Low economic growth during disinflation*

1. Reduction of Time-Inconsistency Problem.

- A numerical target enables the Bank to pursue the long-run strategy and reduce political pressure.

2. Increased Transparency.

- A numerical target is easy to understand and highly transparent.

- Communication with the public and the gov. is necessary to explain.

  - the goals of monetary policy
  - the numerical value and how it was determined.

  - how the target will be achieved
  - reasons for any deviation from the policy.

3. Increased Accountability.

- The transpareney of the policy tends to make the Bank more accountable.

4. Consistency. With Democratic Principles.

- In Canada, the inflation target is jointly decided upon and announced with the gov.

5 Improved Performance.

- inflation targeting policy has been largely sucessful in countries where it has been used.

Disadvantages:

1. Delayed Signaling.

- It takes time for the effects of monetary policy to realized

2. Too much Rigidity.

- Critics say a stated inflation target limit policy makers' ability to deal with unforeseen events.

- In reality, inflation targeting is not as rigid as the critics believe.

- The Bank monitors all info and has discretionary power

3. Potential for increased Output Fluctuations.

- Since inflation targets are within a range, set above zero, there is room to accomodate stabilization policies when necessary.

4. Low economic growth.

- Evidence for Canada suggest that initial disinflationary policies lead to declining output and employment.

- But once the inflation target was achieved output and employment returned to previous level.

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

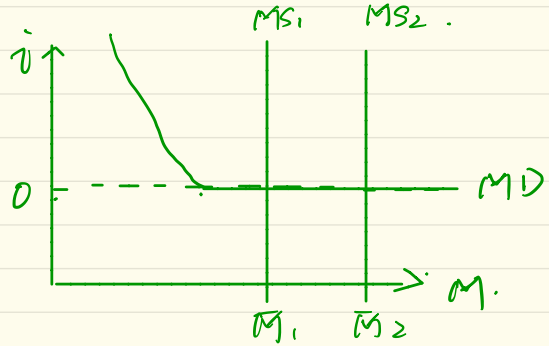
1. Financial Crisis can be far more damading to the economy than previously believed

2. The risk of a liquidity trap makes monetary policy unreliable for dealing with recessions

3. Empirically, growth is slower, unemployment is higher, government indebtness increases in decade following a financial crisis.

4. Price and output stability did not protect us from the last financial crisis, perhaps the stability gave the impression that less risk was present than was really the case, the greater the risk were taken.

The Zero Lower Bound (ZLB) is a macroeconomic problem that occurs when the short-term nominal interest rate is at or near zero, causing a liquidity trap and limiting the capacity that the central bank has to simulate economic growth.

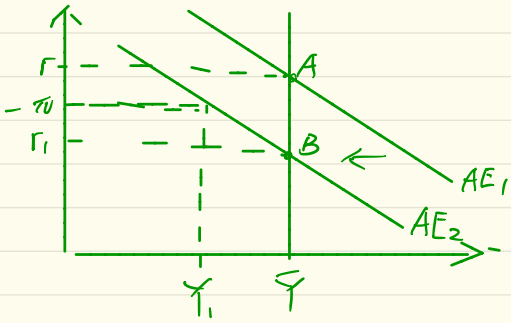


The money demand curve becomes horizontal at a nominal interest rate of zero. In a liquidity trap, money maket equilibrium occurs on the elastic portion of the money demand curve. An increas in the money supply doesn't change the interest rate.

Another way to look at this problem, consider an expenditure shock.

Start where output = potential output ($\bar{Y}$)

A shock shifts AE curve to left.



To keep output from falling, the Bank would have to reduce the real interest rate to r_1.

But r_1 is less than $-\pi$, the lower bound on the real interest rate [$r = 0 - \pi$].

At that interest rate, output falls to Y_1 which is below $\bar{Y}$

Implications for Inflation Targeting

- Level of the inflation target
  - *Central banks typically target inflation around the 2% level*
  - *Seriousness of the zero-lower-bound problem raises the question of whether this target level is too low*
  - *But, it can be harder to stabilize inflation at higher levels*
- Flexibility if inflation targeting
  - *Financial instability can have devastating effects on the economy and that achieving price and output stability does not ensure financial stability*
  - *Central banks need to pay more attention to financial stability in any monetary policy framework*

Note the role of Deflation.

The lower bound on the real interest rate is $-\pi$

This bound is negative if $\pi > 0$, but it is positive under deflation.

Example: if inflation is -2%, the lower bound on the real interest is +2%. If the inflation keeps falling, the real interest rate will get bigger. contracting the economy further.

A positive bound. makes it more likely the Bank will not be able to end a recession.

Level of the inflation target.

- If the target is raised to 4%, and the nominal interest rate is lowered to zero, the real interest rate. [$r = i - \pi^e$] could be decreased to as low as -4%.

- It is more difficult to stabilize at a higher target as expectations for an even higher inflation rate would exist, and the target would no longer be credible.

Flexibility in inflation targeting

- The financial crisis taught us that the Bank needs to pay more atlention to financial stability.

Should Central Banks Try to Stop 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*
  - *Bubbles driven solely by irrational exuberance*

The Debate: Con (Should *Not* Prick Asset-Price Bubbles)

- Asset-price bubbles are nearly impossible to identify
- Raising interest rates to diminish asset-price increases may not be effective
- Many different asset prices exist, and monetary policy is too blunt of an instrument
- Monetary policy actions to prick bubbles can have harmful effects on the aggregate economy
- As long as policymakers respond in a timely fashion, the harmful effects of a bursting bubble are manageable

The Debate: Pro (Central Banks *Should* Pop Bubbles)

- Bursting of credit-driven bubbles can not only be extremely costly, but also very hard to clean up
  - *Recent financial crisis demonstrates this*
- Bubbles can occur even if price and output stability exist in the period leading up to them
- Lean versus clean debate may have been miscast
  - *Rather than leaning against potential bubbles, lean against credit booms*

Policies to Restrain Credit-Driven 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*
  - *Low interest rates may increase the incentives for asset managers to search for higher yields and take higher risks*

Tactics: Choosing the Policy Instrument

- Policy instrument (**operating instrument**)
  - *A variable that responds to the central bank's tools and indicates the stance (easy or tight) of monetary policy*

- Types:

1. *Reserve Aggregates*
   - *Total reserves, nonborrowed reserves, the monetary base, and the nonborrowed base*
2. *Interest Rates*
   - *Overnight interest rate and other short-term interest rates*

Tactics: Choosing the Policy Instrument (cont'd)

- Policy instrument might be linked to an **intermediate target**
- Intermediate targets stand between the policy instrument and the goals of monetary
- Not as directly affected by the tools of monetary policy, but might be more closely linked to the goals of monetary policy

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

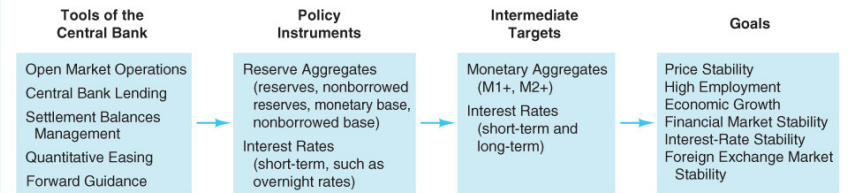


FIGURE 17-2 Linkages Among Central Bank Tools, Policy Instruments, Intermediate Targets, and Goals of Monetary Policy

The tools of the central bank are used to change the policy instruments to achieve the intermediate target and then the goals of monetary policy.

Result of Targeting on Nonborrowed Reserves

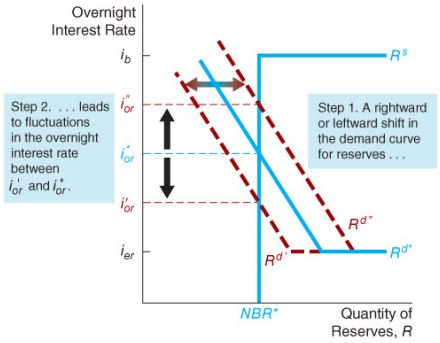


FIGURE 17-3 Result of Targeting on Nonborrowed Reserves

Targeting on nonborrowed reserves of NBR^* will lead to fluctuations in the overnight interest rate between i'_{or} and i''_{or} because of fluctuations in the demand for reserves between $R^{d'}$ and $R^{d''}$.

Result of Targeting on the Overnight Interest Rate

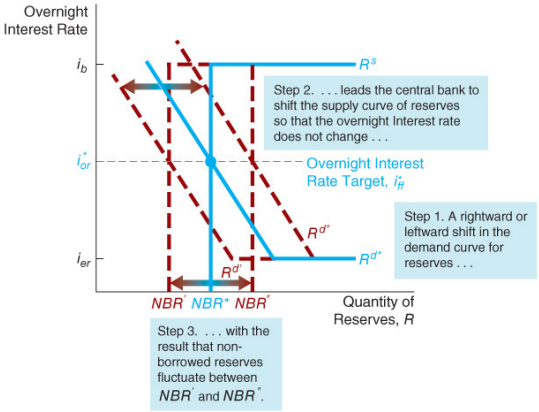


FIGURE 17-4 Result of Targeting on the Overnight Interest Rate

Targeting on the interest rate i^*_{or} will lead to fluctuations in nonborrowed reserves between NBR^* and NBR'' because of fluctuations in the demand for reserves between $R^{d'}$ and $R^{d''}$.

Criteria for Choosing the Policy Instrument

- Observability and Measurability
  - *Quick, accurate measurement is necessary*
- Controllability
  - *Cannot set short-term real interest rates, for example*
- Predictable effect on Goals
  - *Link between interest rates and inflation is likely much tighter than the link between monetary aggregates and inflation*

Tactics: The Taylor Rule

Overnight interest rate = inflation rate + equilibrium overnight rate + ½ (inflation gap) + ½ (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
  - *Rate of unemployment at which there is no tendency for inflation to change*

The Taylor Rule for the Federal Funds Rate, 1970–2011

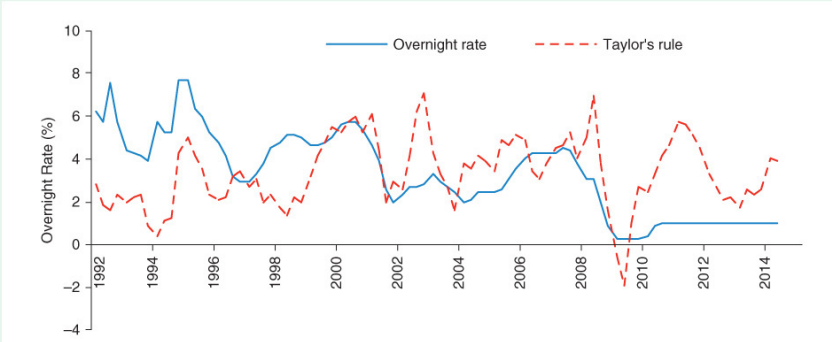


FIGURE 17-5 The Taylor Rule for the Overnight Interest Rate, 1991–2014

The Taylor rule does a pretty good job of describing the Bank of Canada's setting of the overnight interest rate.

Source: Statistics Canada CANSIM series V41690914 and V122514, Bank of Canada historical data, and authors' calculations.