Monetary Policy Goals

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Agenda

- We look at a couple more details about monetary policy in Canada
  - We have seen how open market operations and instruments like it can affect money supply and hence affect the interest rates, broadly
  - We now look at the direct actions that the central bank can take to maintain its target interest rate by intervening in the overnight market

- Then, we look at what goals of monetary policy should be
I. Monetary Policy Tools: LVTS

- Large Value Transfer System – established 1999 by the Canadian Payments Association
- Electronic, real-time net settlement network
- Provides immediate and irrevocable payments between network participants (chartered banks etc.)
- Payments collateralized by payee
- 94% of the value of all transactions in Canada
- Netted out at the end of the day
- Eliminates uncertainty about payments by checking participants’ collateral and disallowing backtracking on all payments
Automated Clearing Settlement System

- Used for non-LVTS paper payment methods, e.g. cheques, traveler’s cheques, gift certificates AND electronic payment items (debit and credit sales, direct deposits)

- ACSS aggregates interbank payments and calculates net amounts of payments to be transferred between banks at the end of each day; the LVTS is then used for the transfers
II. Operating Band for Overnight Interest Rate

- Overnight Interest Rate – rate at which banks borrow and lend to each other
- Shortest-term interest rate in the economy
- Bank of Canada keeps the rate within a band (“channel”/“corridor”) of 50 basis points and targets this band in its policy decisions
  - Upper limit is the rate the Bank charges to LVTS participants that require a loan to cover negative settlement balances on the books of the Bank
  - Lower limit is the rate the Bank pays to LVTS participants who have positive settlement balances at the end of the day
  - Midpoint is the operating target for the Bank of Canada’s monetary policy
Participants of the LVTS have incentive to bring their settlement balances to zero at end-day

- Those with positive positions can benefit by lending their funds to those in debt, at the rate around midpoint of the bank – better terms for both sides (much lower bid-ask spread than the 50 basis points set by the Bank)
- Each day banks are given a pre-settlement window in which to clear their settlement balances with each other
- For those who are not near zero, Bank of Canada helps clear the balances, but at the operating band rates
Bank of Canada implements the target interest rate band by lending and taking deposits from LVTS participants.

- If the overnight rate is slipping toward the bottom of the band, the Bank increases deposit rate, and accepts deposits from LVTS participants at the mid-point of band, to put a floor on the overnight rate.
- If overnight rate is increasing toward the top of the band, the Bank decreases its lending rate to mid-point of band, putting a ceiling on the overnight rate.
Operating Band for Overnight Interest Rate

- Overnight Interest rate
- \( i_{or} \)
- \( i_{b} \)
- \( i_{b} - 0.5 \)

Lender
Borrower

Bank reserves at central bank
III. Effect of Monetary Policy on Economy

- Bank of Canada can directly affect the overnight rate

- By doing so, it has an effect on all the other interest rates in the economy, including rates on bank deposits and mortgages

- Changes in short-term interest rates affect the inflation rate indirectly and with a lag: need for forward-looking policy

- Bank of Canada’s influence over long-term interest rates diminishes with time
IV. Monetary Policy Goals and Strategy

- Monetary policy goals tend to span price stability, full employment, stable economic growth, etc.

- It helps for Central Banks – for purposes of transparency – to clarify their policy goals.

- More often than not, the main goal for a central bank is *price stability*, with a central bank using a *nominal anchor* in its policy-making.
Nominal Anchors

- Price stability is defined as low and stable inflation
- Inflation can create uncertainty in the economy, which in turn can slow economic growth
  - Prices are used as a signal of information in the economy
  - If change too fast, they are hard for consumers/businesses to interpret, which makes it hard to make economic decisions/plan for the future
- A key to successful monetary policy – use of a *nominal anchor*, a variable that helps tie down the price level
  - E.g. inflation or money supply
- Anchoring helps avoid time-inconsistency problem
  - Conflict between expansionary policies and inflationary pressure they can create
Other Goals of Monetary Policy

- High employment
  - Some unemployment is good for the economy (frictional unemployment); some – not (structural unemployment). Difficulty is determining optimal unemployment rate.
  - In short run, goal of price stability conflicts with low unemployment.

- Economic growth
  - Expansionary monetary policy can promote investment/growth

- Financial market stability
  - Avoidance of financial crises

- Interest-rate stability
  - Reduces uncertainty in the economy and financial markets

- Stability in foreign exchange markets
  - Important for making Canadian industries competitive abroad
Which of the Goals to Focus On?

In the long-run, above goals do not conflict, though they can in the short run. Because of the short-run conflict, important to focus central bank actions in some way.

- **Hierarchical Mandate** for the central bank has the central bank focus on one goal as its primary one (usually, price stability), with the other goals (full employment) following on the list.
  - ECB, Bank of Canada, Bank of England, ...

- **Dual Mandate** – equal objectives of achieving, e.g., price stability and full employment
  - Federal Reserve

In practice, central banks let price stability be the primary long-run policy goal, deviating from it in the short run sometimes to spur economic growth/employment
Three Strategies to Achieve Price Stability

- Monetary targeting
- Inflation targeting
- Use of implicit nominal anchor
Monetary Targeting

- Central bank announces a target for the annual rate of growth of a monetary aggregate (e.g. 5% growth in M1 or 6% growth in M2).

- Was adopted in the 1970’s in the U.S.
  - U.S. adopted in 1975, would announce the target publicly but often miss it – large shocks to financial innovation, recessions of the 1980’s...
  - Volcker’s objective was to rid economy of inflation post-1970’s, which he did by maintaining freer control over interest rates, hence he, too, often missed stated monetary targets
  - Fed gave up use of monetary targets in 1993 officially, under Greenspan
Monetary Targeting

Like the U.S., many countries adopted monetary targets but then gave them up

- Canada
- Japan – though was much more successful than the US in the 1970’s and 1980’s in reigning in inflation and output variability.
- Germany and Switzerland – also quite successful. Germany allowed growth of money supply outside target range for 2-3 years at a time, thus allowing itself more flexibility.

- Main reason for its adoption/success: increased transparency, can be practiced flexibly, result known very quickly (money data released without much lag)
- Main reason for limited success: relationship between monetary targets and inflation, e.g., can be weak and weakening as financial innovation accelerates. Thus hitting the target does not accomplish desired goal.
Inflation Targeting

- Adopted by New Zealand in 1990, Canada in 1991, UK in 1992, Sweden and Finland in 1993, Australia and Spain in 1994, Israel, Chile, Brazil, etc...

- Elements:
  - Public announcement of medium-term target for inflation
  - Institutional commitment to price stability as primary long-run policy goal
  - Many variables are used in inflation targeting, not just inflation (Taylor rule)
  - Increased transparency about objectives and tools
  - Increased accountability of central bank for attaining the target
Inflation Targeting

New Zealand – 3-5% band in 1990; changed to 0-2%, then 0-3%; 1-3% in 2002. Idea: target can change with times and economic conditions.

- Initially, inflation brought down successfully, but at the cost of a recession and sharp rise in unemployment
- Subsequently, economy settled into high growth and low unemployment, while inflation has stayed low.

- Similar experience in Canada (unemployment above 10% in 1991-1994, but down since) and the U.K.

- Advantages of inflation targeting: allows policymakers to use all available information in policy decisions. Easily transparent to the public. Reduces political pressure on the central bank by clearly stating its primary goal.

- Disadvantages: delayed signalling, rigidity, potential for increased output fluctuations and low growth.
Inflation Targeting: Taylor Rule

- Taylor Rule helps the central bank determine interest rates based on its inflation target and a number of other variables.

- One form of the rule:

  \[ i_t = F(i_{t-1}, p_t - p^*, y_t - y^*) \]

  Central bank uses previous interest rates (OR interest rate target), deviation of inflation from its target, deviation of output from its potential level in deciding how to set overnight interest rates.

- The exact form of the rule can be flexible, and can be forward-looking as well, taking into account forecasts of inflation and output, for example
Inflation Targeting in New Zealand

(a) New Zealand Inflation (%)

Inflation targeting begins

Target range
Target midpoint
Inflation Targeting in Canada
Inflation Targeting in U.K.

(c) United Kingdom
Inflation
(%)
Implicit Nominal Anchor

- United States does not use an explicit inflation target today, using an implicit one instead: no target range, but inflation control is clearly key policy objective
  - ECB does not have one either – use a hybrid policy of monetary targeting and implicit inflation targeting
- Because there is a lag in the effect of monetary policy on the economy, the Fed acts pre-emptively, using forecasts of economic conditions in its decisions
  - 1994 – preemptive strike against inflation, so that nascent inflation increase never took hold and a large expansion followed
- Advantage: very flexible
- Disadvantage: nontransparent. Bernanke’s agenda has been to increase transparency of the Fed relative to Greenspan.
V. Choosing Monetary Policy Instruments

- The Bank of Canada has two monetary policy instruments at its disposal:
  - Reserve aggregates (various measures of money supply close to the monetary base)
  - Interest rates (overnight interest rate)

- These instruments respond to the Bank’s policy decisions and indicate the stance of monetary policy.

- They can be linked to an intermediate target, such as broader measures of money supply, which in turn affect monetary policy goals (price stability, output growth, etc.)

- Which instrument should the Bank choose?
  - It CANNOT simultaneously target reserve aggregates and interest rates; controlling one means giving up complete control of the other.
From the Channel System to Supply of Reserves

Bank reserves at central bank

i_or
Overnight Interest rate

i_b

i_or

i_b - 0.5

Lender

Borrower

Bank reserves at central bank
Channel System for Setting the Interest Rate: Reserve Supply

Overnight Interest rate

\[ i_{or} \]

\[ i_b \]

\[ i_b - 0.5 \]

\[ NBR \]

\[ R^s \]

Quantity of reserves, \( R \)
Channel System for Setting Interest Rate: Reserve Demand

Overnight Interest Rate: \( i_{or} \)

Quantity of reserves, \( R \)

- \( i_b \)
- \( i_{or}^* \)
- \( i_b - 0.5 \)

Supply: \( R^S \)

Demand: \( R^D \)
Increase of Reserve Demand

Overnight Interest rate

\( i_{or} \)

\( i^*_{or} \)

\( i_b - 0.5 \)

\( R^s \)

\( R^D \)

\( R^D_D \)

Quantity of reserves, \( R \)

NBR
Decrease of Reserve Demand

Overnight Interest rate

i_or

i_b

i*_or

R^S

R^D

R_2^D

NBR

Quantity of reserves, R
Example

- Suppose the Bank of Canada wants to achieve the rate of growth of output of 5%.
- It believes that this can be achieved by expansionary monetary policy, which involves increasing M2 by 3%.
- This in turn means for the Bank that it can use its two policy instruments as follows:
  - increase nonborrowed reserves (part of monetary base) by 2%,
  - and/or set the overnight interest rate to 3%.
- Can it target both? – No! We will now show that whichever policy instrument it chooses to control, the other one will fluctuate, so that it will not be under full control of Bank of Canada.
Policy Instrument 1: target growth of reserves

Overnight Interest rate

\[ i_{or} \]

Quantity of reserves, \( R \)

\[ NBR^* \]

\[ R^s \]
Policy Instrument 1: target growth of reserves

\[ i_{or} \]

Overnight Interest rate

\[ R^s \]

\[ R^D* \]

NBR* Quantity of reserves, R
Policy Instrument 1: target growth of reserves

![Graph showing Overnight Interest Rate (i) vs. Quantity of reserves (R)]

- **i**<sub>or</sub>: Overnight Interest rate
- **NBR**: Quantity of reserves
- **RS**: Target growth of reserves
Policy Instrument 1: target growth of reserves

Diagram showing Overnight Interest Rate (i_{or}) on the y-axis and Quantity of reserves, R, on the x-axis. The diagram includes curves representing different scenarios with notation R^s, R^D, R^{D*}, and R^{D1}.
Policy Instrument 2: target overnight rate
Policy Instrument 2: target overnight rate

\[ i_{or} \]

Overnight Interest rate

\[ R^s \]

\[ R_{1D} \]

\[ R^{D*} \]

NBR\(^*\)NBR\(_1\)

Quantity of reserves, \( R \)
Policy Instrument 2: target overnight rate

Overnight Interest rate

\[ i_{or} \]

Quantity of reserves, \( R \)

\[ NBR_2, NBR^*, NBR_1 \]
Choosing Policy Instrument

Most central banks around the world use the interest rate as their instrument of choice:

- There is some evidence that central banks can best control it, that it is quickly observable (and hence economy knows the stance of monetary policy quickly), and that it has predictable effect on desired goals.
- Caveat: knowledge of the nominal interest rate is not sufficient because the real interest rate is a better predictor of the economy, and the central bank does not control expected inflation.

This means that the central bank agrees to use open market operations in order to target the desired interest rate, rather than the other way around.