CHAPTER 22:

The Bank of Canada and the Tools of Monetary Policy

**FOCUS OF THE CHAPTER**

This chapter describes the **origin**, **history**, and **functions of the Bank of Canada**. A historical overview of the policies adopted by the bank of Canada is also provided. The policy of **inflation targeting** and the **tools of monetary policy** are discussed in detail.

**Learning Objectives:**

1. Explain why central banks were created
2. List the functions of the Bank of Canada and describe how it began
3. Determine whether political motives led to the creation of Bank of Canada
4. Describe the milestones and important characters in the history of the Bank of Canada and monetary policy
5. Explain how inflation targeting works
6. List the most important tools with which the Bank of Canada influences financial markets
7. Describe what prompted the emergence of some of the newer tools at the Bank's disposal
8. Explain the transmission mechanism of monetary policy

**SECTION SUMMARIES**

**The Founding of Central Banks**

Central banks were established in many countries before Canada as a result of a natural evolution. The main reason for their establishment was the need for a lender of last resort.

The momentum to create central banks increased due to the realization that central banks enable governments to monopolize the issue of currency and to make additional revenues from issuing money. The role of central banks has evolved. They still function as lenders of last resort, but the focus of their role has shifted towards exchange rate policies, international financial cooperation, maintenance of price stability, and bank-government relations.

**The Bank of Canada**

***Origins:*** The formation of the Bank of Canada (Canada’s central bank) in 1934 was influenced by two historic events of the 1930s: a) the Great Depression, and b) the end of the gold standard. The impetus for creating the Bank of Canada was largely political. The hard times of the 1930s, Canadian regionalism, the need for Canada to coordinate international economic policies with those of the other countries, and Canada’s evolution towards becoming a fully sovereign state after World War II were among the political reasons that led to the formation of the Bank. In the beginning, the Bank was a private institution which issued stock. In 1936, the Bank was completely nationalized, and by 1938 the government had acquired all of the shares.

***History:*** Some of the more salient features of the history of the Bank of Canada are outlined in this section.

*Pre-war Era:* In its earliest days, the Bank of Canada worked to smooth seasonal variations in interest rates and to develop a market for government debt. Its greatest contribution was to provide and regulate cash in the economy. It was able to manage the money supply and to smooth out seasonal variations in interest rates. It was also able to create a market for government debt instruments such as T-bills. It frequently resorted to moral suasion during this period.

*Early Post-war Period:* During the early post-war period, the Bank of Canada followed a policy of "cheap money" with artificially low interest rates. In 1953, following the Korean War, the Bank faced its first recession and responded by easing monetary policy and assisting the government in financing deficits.

*The Coyne Affair:* The late 1950s were marked by controversies surrounding high interest rates in a time of recession, the Canada-US exchange rate, and the control of inflation. In 1955-56, the Bank of Canada generally followed a restrictive monetary policy while encouraging the development of the money market. At the end of the 1950s, the restrictive monetary policy adopted by the Bank in the face of high unemployment and slow growth generated severe tension between the Bank and the federal government, resulting in the controversy known as the Coyne affair. The controversy led to a revision of the relationship between the Bank of Canada and the federal government, and resulted in an agreement that the government should have ultimate responsibility for monetary policy.

*The 1960s to the 1990s: Searching for an Anchor for Monetary Policy:* The 1960-72 period was a period of fixed exchange rates. The Bank was concerned with maintaining the Canadian dollar at 92.5 cents US. In response to stagflation (economic stagnation with high inflation) resulting from oil price hikes in the early 1970s, the Bank of Canada resorted to a policy of monetary targeting (controlling the growth of selected monetary aggregates) which, at that time, was gradualist. By the end of the 1970s, this policy was deemed a failure since inflation had increased (partly due to second oil price hike in 1979) and the volatility of interest rates also had increased. The recession of 1981-82, led to the next phase of monetary policy which focused increasingly on price stability. During this period, the Bank of Canada tolerated even higher interest rates in order to maintain price stability. This emphasis on price stability did not alter even in the face of recession in the early 1990s.

*Inflation Targeting and the Current Objective of Monetary Policy:* In 1987, the Governor of the Bank of Canada laid out a specific agenda for disinflation. In February 1991, the Government of Canada formally approved inflation targeting and announced inflation targets for the 1990s (3% by December 1992, 2% by December 1995, and less than 2% by the second half of the 1990s). After the election of a new government in 1993, the targets were first extended to the end of 1998 and then to the end of 2001. But the targets were redefined as a 1% to 3% range, with 2% as the most desirable rate. Under the policy of inflation targeting, inflation in the CPI (Consumer Price Index) and core inflation (inflation in CPI excluding food, energy, and indirect taxes) have displayed different behaviour, but the differences have been less pronounced of late.

Another important feature of monetary policy in the 1990s was the drive to increase the accountability of the Bank and the transparency of its operations. The first Monetary Policy Report issued in this regard stressed that greater accountability implied meeting the following three criteria: 1) a clear policy objective; 2) a medium-term perspective; and 3) the recognition that monetary policy works through both the interest rate and exchange rate.

Canada was the second country in the world (after New Zealand) to adopt inflation targeting. Many other countries, including Australia, Sweden, and the United Kingdom, are currently adopting policies of inflation targeting.

***Responsibilities and Organization:*** Broadly, the Bank of Canada’s responsibilities include the conduct of monetary policy, facilitating growth of economic activity, and attaining low levels of unemployment. Its functions include: 1) conducting open market operations; 2) controlling monetary policy through interest rate control and monetary base management; 3) acting as the federal government’s fiscal agent; 4) acting as a lender of last resort; and 5) conducting a number of other operations, such as foreign reserves management.

According to the Bank of Canada Act, the governor is responsible for the conduct of monetary policy and is directly responsible to the minister of finance. The board of directors includes the governor, the senior deputy governor, 12 directors appointed by the government, and the deputy minister of finance (an ex-officio, non-voting member). The board of directors selects the governor, subject to government approval. Monetary policy is made by the governing council, composed of the governor and his/her senior advisors.

**Tools of Monetary Policy**

Interest rate changes and exchange rate movements are key indicators of the stance of monetary policy, since Canada is a small open economy. Both the primary tools and less frequently used tools of monetary policy are discussed in this section. Some of these instruments were discussed in Chapter 4.

***The Overnight Market and the LVTS:*** The overnight market has existed in Canada since the 1950s. In 1994, the Bank of Canada formalized its role in this market by adopting an operating band for the overnight rate. The operating band is a 50 basis point spread between the bank rate and the rate paid on positive balances held at the Bank. In the beginning, the Bank of Canada announced target rates anywhere within the band. In 1996, since the full introduction of LVTS (large value transfer system), the target has always been the mid-point rate. The operating band has been used frequently to signal an easing or a tightening of monetary policy.

The LVTS, a real time electronic settlement system, permits clearers to achieve zero settlement balances on a real time basis. Overdrafts for LVTS participants are charged at the bank rate, and surpluses are paid at a rate equal to the lower limit of the band. Paper-based items such as cheques are cleared overnight using the Automated Clearing Settlement System (ACSS).

***Advances:*** Advances are loans issued to banks by the Bank of Canada as the lender of last resort. The interest rate charged on them is the bank rate. Until March 1980, the bank rate was set independently, to signal the direction in which the Bank wanted interest rates to change. In March 1980, the bank rate was linked to the Treasury bill rate: bank rate = treasury bill rate + 0.25%. Since February 1996, the bank rate has been set at the upper limit of the overnight band.

***Buybacks:*** These instruments include special purchase and resale agreements (SPRAs) and sales and repurchase agreements (SRAs), discussed in detail in Chapter 4. These are used to alleviate temporary shortages and surpluses in liquidity that otherwise would push the overnight rate beyond the upper or lower limit of the operating band. SPRAs were introduced in 1985.

***Foreign Exchange Transactions and Intervention:*** The Bank of Canada manages the Exchange Fund Account (EFA) in which the official foreign exchange reserves of Canada are held. Using this account, the Bank of Canada engages in foreign exchange swaps to influence the reserves of the banking system. A foreign exchange swap involves a spot transaction and a futures contract. The Bank purchases foreign exchange from EFA to increase reserves in the banking system. Sales of foreign exchange to the exchange fund are used to reduce the reserves in the banking system. In 1991, a new kind of swap was introduced which involves selling foreign currencies to buy Canadian dollars and reversing the transaction later. In principle, intervention in the foreign exchange market can be used to affect the exchange rate. However, Canada has not intervened during the past few years.

***Open Market Operations*** ***and Banking Reserves:*** The buying and selling of government securities in the open market (open market operations) has direct effects on interest rates.

Open market operations can be thought of as a method of intervention in the market for loanable funds. Open market operations are mostly conducted using treasury bills.

Open market operations are a powerful tool because their effect on excess reserves is immediate.

***Other Tools:***

*Moral Suasion:* This technique is often used by the Bank of Canada to persuade financial institutions to change their behaviour voluntarily. However, globalization and deregulation may make this a rather ineffective tool of monetary policy.

*Base Control:* Base control is the means by which the Bank of Canada controls movements in the monetary base, and thereby the growth of the money supply. The monetary base (MB), or high-powered money, is given by the following equation:

*MB = CUR + RES*

where *CUR =* currency held by chartered banks and the public, and *RES* ***=*** reserves of the banking system held at the Bank of Canada. For various reasons, such as the Bank's inability to dictate the currency requirements of the public, the Bank of Canada’s control over the monetary base is not total. Debt monetization (the issuing of money by the central bank to support government spending) also makes it difficult to control the growth of the money supply.

*The Base and the Money Multiplier:* The link between the central bank and the money supply can be demonstrated using the money multiplier. The money multiplier is the multiple by which the money supply changes in response to a change in the monetary base.

Recall that the narrow definition of money (M1) is the sum of the currency in circulation (*CUR*) and demand deposits (*DEP*):

M1 = *CUR + DEP*

M1/*DEP* = *CUR /DEP + DEP*/*DEP* = *cr* + 1

where *cr* is the currency deposit ratio (i.e., *CUR/DEP*).

The monetary base is given by:

*MB = CUR + RES*

*MB/DEP = CUR/DEP + RES****/****DEP* = *cr* ***+*** *rr*

where *rr* is the reserve ratio (i.e., *RES****/****DEP*)

The equations for M1 and MB can be rewritten as follows:

M1 = (*cr* + 1) *DEP*

MB= (*cr* ***+*** *rr*)/*DEP*

The ratio M1/MB is given by:

M1/MB= (*cr* + 1) *DEP*/(*cr* ***+*** *rr*)/*DEP* = (*cr* + 1)/ (*cr* ***+*** *rr*)

The money multiplier = (*cr* + 1)/ (*cr* ***+*** *rr*). Note that the money multiplier is determined by *cr*and*rr*.

*Reserve Requirements:* In the past, Canada has imposed two types of reserve requirements: primary reserve requirements and secondary reserve requirements. Both types of reserve requirements were phased out by July 1994 for various reasons.

**The Transmission Mechanism**

In general, the transmission mechanism is the mechanism by which the changes in monetary variables affect the real variables in the economy. The chain of events leading to changes in price level following a monetary policy action by the Bank of Canada is described as follows: Monetary policy actions affect exchange rate and interest rates. Changes in the exchange rate and in interest rates lead to changes in aggregate demand. Changes in aggregate demand affect the price level in the economy. Thus, monetary policy affects the price level through changes in the exchange rate and in interest rates and through changes in aggregate demand.

**MULTIPLE-CHOICE QUESTIONS**

1. The main reason for the establishment of central banks in many developed countries is:

a) the need to generate profits by printing money.

b) the need for an authority to counter the effects of fiscal policy.

c) the need for a lender of last resort.

d) the need to manage foreign exchange reserves.

2. Seigniorage is the

a) profits earned by selling government bonds.

b) the fees earned by banks’ service charges.

c) the revenues generated by deposit insurance premiums.

d) the interest earned by central banks on the government debt that they are able to finance by the issue of currency.

3. Which of the following were the two influential historic events leading to the formation of the Bank of Canada?

a) World War I and the end of the gold standard.

b) The end of the gold standard and the Great Depression.

c) The Great Depression and World War II.

d) World War II and the establishment of a central bank in the United States in 1913.

4. When did the Bank of Canada commence operations?

a) 1867

b) 1913

c) 1934

d) 1935

5. Canada’s well-known monetary policy dispute in the late 1950s is called

a) Trudeaumania.

b) the Raminsky dispute.

c) the Coyne affair.

d) the Great Canadian Slump.

6. The main reason for the introduction of monetary targeting was

a) to bring inflation under control.

b) to fix the exchange rate between the Canadian dollar and the US dollar.

c) to counter the deflation coupled with stagnation.

d) to control the velocity of circulation.

7. Since 1991, the Bank of Canada has followed a policy of

a) monetary targeting.

b) inflation targeting.

c) exchange rate targeting.

d) interest rate targeting.

8. According to the Bank of Canada Act, the long-term goals of the Bank of Canada include

a) open market operations.

b) acting as a lender of last resort.

c) conducting monetary policy.

d) facilitating growth of economic activity.

9. Currently, the Bank of Canada’s target rate for the overnight market

a) is determined anywhere within the operating band.

b) is the upper limit of the operating band.

c) is the lower limit of the operating band.

d) is the midpoint of the operating band.

10. Overdrafts for participants in the large value transfer system (LVTS)

a) are paid a rate equal to the lower limit of the operating band.

b) are charged a rate equal to the upper limit of the operating band.

c) are charged a rate equal to the bank rate plus 1.5%.

d) are paid a rate equal to the bank rate less 1.5%.

11. DEP = demand deposits at chartered banks, RES = reserves of the banking system held at the Bank of Canada, CUR = currency held by the chartered banks and the public. The monetary base (or high-powered money) is given by

a) CUR + DEP + RES.

b) CUR - RES + DEP.

c) CUR + RES.

d) DEP + RES.

12. An increase in the currency drain ratio will

a) increase the money multiplier and decrease the monetary base.

b) decrease the money multiplier and decrease the monetary base.

c) increase the money multiplier and decrease M1.

d) decrease the money multiplier and decrease M1.

13. The Bank of Canada can raise the overnight rate by

a) either an open market purchase or a SPRA.

b) either an open market purchase or a SRA.

c) either an open market sale or a SPRA.

d) either an open market sale or a SRA.

## PROBLEMS

## 1. Briefly state the functions of the Bank of Canada.

## 2. What is the likely impact of the following actions of the Bank of Canada on the money supply and the rate of interest?

## a) increasing Bank of Canada advances

## b) engaging in a Special Purchase and Resale agreement

## c) purchasing foreign exchange from the Exchange Fund Account

## 3. Consider the following data: demand deposits at chartered banks (DEP) = $400 million; reserves of the banking system held at the Bank of Canada (RES) = $20 million, currency held by the chartered banks and the public (CUR) = $200 million.

## a) What is the level of the narrow money supply (M1)?

## b) What is the size of the monetary base (MB)?

## c) Calculate the money multiplier.

## 4. Explain how the transmission mechanism operates in the case of an increase in the overnight lending rate.

5. Explain why an individual would sell assets to increase their money balances, but the Bank of Canada would buy assets (bonds) to increase the money supply.

**ANSWER SECTION**

**Answers to multiple-choice questions:**

1. c (see page 435)
2. d (see page 435)
3. b (see page 436)
4. d (see page 436)
5. c (see page 438)
6. a (see page 439)
7. b (see page 440, 441)
8. d (see page 444)
9. d (see page 447)
10. b (see page 447)
11. c (see page 454)
12. d (see page 456)
13. d (see pages 450, 453)

**Answers to problems:**

1.The functions of the Bank of Canada include the following: a) As the central bank of the nation, the Bank of Canada is responsible for the issuance of Canada’s bank notes; b) the Bank of Canada acts as the lender of last resort and provides temporary liquidity to the banking system; c) the Bank also acts as the fiscal agent (the banker) of the federal government and manages government deposits. It also acts as financial advisor to the government; d) the bank manages the country’s official foreign exchange reserves, held in the exchange fund account; e) the Bank conducts monetary policy using various monetary policy tools; and f) the Bank represents Canada in international financial institutions.

2. a) Increases in Bank of Canada advances to the members of the Canadian Payments Association (CPA) increase the reserves in the banking system, generating an increase in the money supply and a decrease in interest rates.

b) Special purchase and resale agreements are used to increase the level of liquidity in the financial system. The outcome of such an agreement is an increase in money supply and a decrease in interest rates.

c) The purchase of foreign exchange from the Exchange Fund Account is used to decrease the reserves in the banking system. As a result, the money supply decreases and rates of interest increase.

3. a) M1 = CUR + DEP = 200 + 400 = 600 million

b) MB = CUR + RES = 200 + 20 = 220 million

c) The currency-deposit ratio (*cr*) = CUR/DEP = 200/400 = 0.5

The reserve-deposit ratio (*rr*) = RES/DEP = 20/400 = 0.05

The money multiplier = (*cr* + 1)/(*cr* + *rr*) = (0.5 + 1)/(0.5 + 0.05) = 1.5/0.55 = 2.73

4.An increase in the overnight lending rate is designed to keep the inflation rate from rising above the target range. An increase in the overnight lending rate increases the foreign value of the Canadian dollar and increases the interest rate. These changes lead to a decrease in aggregate demand, which in turn leads to a decline in the general price level. Thus the impact of an increase in the overnight rate on the inflation rate is negative.

5. To the individual, money is an asset which can only be obtained in exchange of another asset. The monetary base is, however, a liability of the Bank of Canada, and to increase it, the Bank of Canada has to simultaneously increase its assets and liabilities by buying bonds and adding to the deposit of the banking sector.