Monetary Policy

Bank of Canada

The objective of monetary policy may be gleaned from to preamble to the Bank of Canada Act of 1935 which says,

"… regulate credit and currency in the best interests of the economic life of the nation … and to mitigate by its influence fluctuations in the general level of production, trade, prices and employment, so far as may be possible within the scope of monetary action …"

In other words, it gives the Bank of Canada the mandate to control money supply, and interest rates (depending on its target), and prevent excessive deviations of economy activity from the potential output level, which consequently controls employment and inflation.

Performance

The Bank of Canada's stated aim had been to keep Canada's inflation rate within the range of 1 to 3 percent, and will aim to keep the trend of inflation at the two percent mid point. In terms of this target, they have been very successful in both respects.

Rationale for the policy

The benefit of controlling inflation or setting the inflation rate as the target is that it allows all constituents within the economy to make better decisions due to well formed expectations about the economy's future. Recall both your AD and AS are affected by expectations.

Bureaucratic Process

Both the Government of Canada and the Bank of Canada jointly agree upon monetary policy, and their targets.

1. The stand of the Bank of Canada is made by the Governing Council of the Bank of Canada consisting of the Governor (David Dodge), Senior Governor and 4 deputy Governors, all experts in Monetary Policy having been through the ranks of the central bank.
2. The Council is assisted by research performed by research economist within the central bank.
3. Monetary Policy is then made through consultation between the Governor and the Minister of Finance, with the final overriding power vested with the Minister.

The Canadian Conduct of Monetary Policy: Short Term Interest Rate Targeting

Choice of Policy Instrument

1. Quantity of Money: The Monetary Base, recalling what is defined as the Monetary Base.
2. Short Term Interest rate: Which determines the opportunity cost of holding money. The instrument of choice for Canada, and the USA.
3. Exchange Rate: Which determines the price of money on the foreign exchange market. This last item will be covered later. The instrument of choice for economies that rely heavily on international trade, such as Singapore.

As you will recall the central bank cannot choose all three or a combination of two policy instruments. The reason being the choice of one determines the other two. Consider the demand for money market, once the quantity of money supply is set, the interest rate is then determined as a consequence.

Controlling Short Term Interest Rate

Since the instrument of choice for Canada is through controlling short term interest rate, we will focus our discussion on this in more detail, and examine the other instruments subsequently. The specific interest rate that the Bank of Canada controls is the Overnight Loans rate, i.e. the interest rate at which banks lend each other their excess reserves. Since 2000, the Bank of Canada has 8 preset dates on which it announces the overnight interest rate (This rate is sometimes referred to as the interbank rate). The degree of movement in this interest rate is in the magnitude of a quarter of a percentage point, for example, 1 percent is 0.01. So a quarter of one percentage point is 0.0025, or 25 basis points, where 1 basis point is 0.0001, or 1/1000.

The Decision Process within the Central Bank

1. **Instrument Rule**: It is a decision rule for monetary policy that sets the policy instrument at a level that is based on the current state of the economy. The most common is the Taylor rule. Let the overnight rate be R, and the neutral real overnight rate be R^* (Typically thought of as 2%), the inflation rate be π and the target inflation rate be π^*, and the difference between the GDP and the potential level of output, G. Then the Taylor rule says that the overnight rate should be set at $R = R^* + \pi + 0.5(\pi - \pi^*) + 0.5G$. That is this rule sets the overnight rate dependent on deviation of inflation from the target and the size and difference between the GDP from the potential output level. The principal reason this rule is

not used is that it creates to much movement in the Overnight rate.

2. **Targeting Rule**: This form of process involves the estimation forecasting of the economic performance of the economy. This involves the empirical estimation of the economy. The overnight interest rate is then set so that the economy forecasted inflation rate would coincide with the target inflation rate/unemployment rate.

The Bank of Canada uses the latter rule because it is a more informed choice that uses more information regarding the economy, including regional differences. The ultimate decision is made by the Governing council and announced publicly.

Once the interest rate is set, the Bank of Canada uses two tools to hit that target, and the work in concert with each other,

1. ***Operating Band***: The operating band is the target overnight rate plus or minus 25 basis points. Precisely what this means is that the banks sets its loan rate (***Bank Rate***) to other banks at 25 basis points above the target rate, and its pays the banks a deposit rate (***Settlement Balance Rate***) of 25 basis points below the target rate. This thus set the upper and lower bound for the rate at which the banks lend to each other on the overnight loans market. This tool however keeps the rate within a band only, while the Bank of Canada (or a central bank who wants to operate via the overnight loans market) wants to be more precise. This is achieved via the second tool, through open market operations. Why would this band control the overnight rate to hover within it, as opposed to above the ***Bank Rate*** or below the ***Settlement Balance Rate***?
2. ***Open Market Operation***: As the term suggests, the Bank of Canada enters into trading a financial instrument to control the rate even further. They do so by taking either a long (buy) or short (sell) position on government treasury bills and bonds, depending on whether the overnight rate is closer to either the upper or lower bound respectively. During each start of the day, the banks trade loans with each other, and just before noon, the Bank of Canada enters the financial market to conduct its open market trades if necessary (if the target rate is achieved for the day, the Bank of Canada does nothing). Precisely,
    a. If the overnight rate is above the target, the Bank of Canada would take a long position on the said securities to raise the reserves of the Banks (when Bank of Canada buys securities held by the banks it shores up the reserves held by the banks, effectively raising their excess reserves.) This then increases the supply of funds available for the overnight market, and

consequently (using your standard demand and supply analysis) leads to a fall in the overnight lending rate to the precise target level. Note that this operation effectively raises the assets held by the Bank of Canada. Why?

b. If instead the overnight rate is below the target, the Bank of Canada takes a short position, and sells their securities to the banks. This then reduces excess reserves available for use in the overnight market, and increases consequently the overnight lending rate.

Monetary Policy Transmission

How does this change in the overnight lending rate affect the economy? We now examine the full transmission of what the Bank of Canada, or central banks in general can affect the economy's operation. We will consider the effects of an increase in the Overnight Lending Rate. The arguments for a decrease is opposite in sign, but the sequence are exactly the same.

1. Bank of Canada raises the Overnight Lending Rate via the Operating Band and Open Market Operation.
2. From the original position, this is tantamount to a overall open market operation of the Bank of Canada taking a short position in all the securities, such as treasury bills, and bonds. This position reduces the price of the securities, thereby reducing the increasing the rate of interest (Recall the relationship between the price of perpetuities and the interest rate). {*We will be discussing the effects of this on exchange rates shortly, but it is interesting to consider the Central Bank's effect on exchange rates here. As the interest rates rises, this means returns to investments become higher. This attract inflow of foreign funds into the economy through foreign institutions buying the securities sold by the Bank of Canada, this increase in demand for domestic currency (as your simple demand and supply analysis highlights) raises the price of domestic currency, i.e. the exchange rate, so that the Canadian dollar appreciates in value against all other currency. In consequence, this makes Canadian exports more expensive.*}
3. As money/reserves are transferred from the Banks to the Bank of Canada (Central Bank), the reserves in the Banks accounts falls (Assets increases). This then implies a fall in excess reserves available to the Banks for loans/credit, as well as loans becoming less attractive to firms and individuals. The increase in lending rates, in turn also means that banks will pay higher interest rates for your deposits so that they can lend at this high rate.
4. As firms reduce their investment spending (*I* in your AE equation), real

output/income in the economy falls. At the same time, because interest rates on deposits becomes higher, the opportunity cost of holding money rises, so consumers would reduce their cash holdings, and reduce their consumption (*C in your AE*). This in total sums into a reduction in Aggregate Expenditure of the economy. The relative importance of investment and consumption is dependent on the elasticity of these variables to changes in interest rates. {*Extending our international trade argument, the appreciation of the Canadian dollar makes our goods more expensive against other economies' thereby reducing exports, and at the same time, because the Canadian dollar is of a higher value, we can then increase our imports. Taken together, this implies a decrease in net exports (X-IM).*}

5. On the aggregate, what this means then is that the AD will fall (shifting the AD downward).
6. Holding SAS constant, this implies a fall in equilibrium real output/income, and inflation falls.

How effective are these monetary policies by the government?

The Bank of Canada has to be careful in its choice of overnight rate, too great an increase in interest rate and the economy would be pushed into a recession (As it did in 1981 and 1991). Too great a drop in interest rate would drive inflation up (As it did in the 1970s). Further, they have to be careful in permitting the economy sufficient time to make the adjustment considering the sequence of events noted above. Consider investments made by the firms, firms do not change policy on their operation immediately particularly incorporated firms. Neither do we as consumers alter our savings and spending habits in an instance when Bank's change their interest rates given our individual long term commitments. Having made these caveats, the Bank of Canada has been quite successful in their monetary policy. Also note why when the Bank of Canada, or the Federal Bank in the US make their interest rates known, the adjustments are usually very small.

Alternative Monetary Policy Strategies

The description of the method of regulating the economy of choice by the Bank of Canada is through targeting interest rates. As we have noted, there is at least another one; that being that of the instrument rule, i.e. the ***Taylor Rule***. There other methods that similar aims can be achieved.

1. **Monetary Base Instrument Rule**: This method typically referred to as the ***McCallum Rule*** focuses on making the monetary base grow at a rate equal to the

target rate of inflation + long term real GDP growth rate – medium term velocity of circulation of the monetary base (We will cover the idea of velocity of money shortly.) The advantage this method has is that it does not require the Bank of Canada to estimate the neutral real overnight rate, nor the deviation between GDP and potential GDP. However, it does require that the velocity of money being stable, since if the velocity at which money gets circulated within the economy varies, it would affect how effective this method would be.

2. **Exchange Rate Targeting**: This involves controlling the exchange rate of the economy, which in turn would determine all the other variables such as interest rates etc. These methods are used principally by economies without a developed bonds market, usually developing economies.
    a. One possibility for the Bank of Canada is to fix its desired exchange rate vis-à-vis the major currencies (***Fixed Exchange Rate***). To maintain this exchange rate, the central bank then engages in open market trades in foreign currency. However, if the Bank of Canada chose this route, they effectively surrender the determination of inflation to the market forces since price of goods across borders must be aligned by virtue of purchasing power parity, else their would be arbitrage possibilities. For example, Hong Kong, and China pegs its exchange rate to that of the USD.
    b. Another method that allow the Central Bank to control exchange rate and some form of control over inflation rate is using the ***Crawling Peg***. This method involves the controlling the exchange rate such that it is equal to the US inflation rate minus the Canadian Target rate of Inflation. The disadvantage to the use of this method is that the ***real exchange rate***, which is dependent on the price of a basket of goods, is different between most economies. So to accurately adjust for this differential in content of the price index, so as not to make the wrong adjustments is difficult.
3. Money Target Rule: The idea here is to make the quantity of money grow at a rate of *k*% a year, where k is equal to the growth rate of the potential GDP. This method was developed by Milton Friedman of University of Chicago. The idea was effectively used by Canada in the 1976 when the Canadian inflation rate was 10%. The adoption of this policy helped bring inflation under control until 1982. Subsequently, the Bank of Canada adopted the method of choice we see today. The method works well when the demand for money is stable. However, since the 1980s, banking innovations has led to large changes in the demand for money,

which hence makes this method in turn unreliable.