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# THE BANK OF CANADA AND THE IMPACT OF INTEREST RATES ON THE ECONOMY

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# THE BANK OF CANADA AND THE IMPACT OF INTEREST RATES ON THE ECONOMY

On 3 September 2003, the Bank of Canada issued a news release announcing its intention to reduce the target for its overnight interest rate.(1) The first paragraph stated:

> The Bank of Canada today announced that it is lowering its target for the overnight rate by one-quarter of one percentage point to 2 3/4 per cent. The operating band for the overnight rate is correspondingly lowered, and the Bank Rate is now 3 per cent.(2)

Within moments, newswire services, on-line newspapers, and television and radio networks responded with headlines and bulletins which said that interest rates, in the plural, would be reduced because inflation threatened to fall below the Bank's target rate of 2%, the halfway point in its 1% to 3% target range.(3) Later that day, Canada's large chartered banks announced their intention to reduce their prime lending rates.(4)

This paper examines the role played by the Bank of Canada in the Canadian economy, paying particular attention to how changes in the overnight interest rate affect a range of interest rates and how these rates, in turn, affect the economy.(5)

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(1) The target for the overnight rate is the midpoint between the bank rate (i.e., the rate at which the central bank lends money to chartered banks) and the central bank's borrowing rate (i.e., the rate at which the central bank borrows money from the chartered banks).

(2) Bank of Canada, "Bank of Canada lowers target for the overnight rate by ¼ percentage point to 2¾ per cent," available at: http://bankofcanada.ca/fixed-dates/2003/rate_030903.htm.

(3) A headline from a Canadian Press wire story in *The Telegram* [St. John's] on 4 September 2003 (p. D1), for example, stated that "Bank of Canada trims interest rates, but not all will benefit."

(4) See, for example, Marian Stinson, "Central bank trims key rate. But indicates plan to now hold steady," *The Globe and Mail*, 4 September 2003, p. B1. In the article, Stinson notes that "[c]hartered banks cut the cost of loans to their most creditworthy customers to 4.5% yesterday after the central bank reduction and lenders lowered some mortgage rates."

(5) This paper does not discuss the effects of low inflation on the economy. For a discussion of this topic, see Tiff Macklem, "Price stability, inflation targets, and monetary policy: Conference summary," *Bank of Canada Review*, Winter 1997-1998.

## THE IMPORTANCE OF THE CENTRAL BANK

The Bank of Canada is mandated by the preamble of the *Bank of Canada Act* to set monetary policy with due consideration for inflation, output and employment.(6) Specifically, it is to:

> regulate credit and currency in the best interests of the economic life of the nation, to control and protect the external value of the national monetary unit 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, and generally to promote the economic and financial welfare of Canada.(7)

Since the late 1970s, however, a number of the world's central banks, including the Bank of Canada, have adopted a narrower policy objective of regulating inflation through their influence over the short-term (overnight) interest rate.(8) The Bank of Canada's Web site describes this goal – derived in agreement with the Government of Canada – in the following terms:(9) "The goal of monetary policy is to contribute to solid economic performance and rising living standards for Canadians by keeping inflation low, stable, and predictable."

The Bank of Canada's legislated mandate, as well as its official inflation-targeting objectives, highlight the importance of this institution. Its importance stems from six key policy functions. First, it is the sole supplier of bank notes.(10) Second, it is an important buyer of federal government debt. In 2002, the Bank of Canada held 11.1% of all federal marketable debt. The interest on this debt generated almost $2 billion in "seigniorage" revenue for the

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(6) Some central banks concern themselves only with maintaining a "fixed exchange rate" between the domestic currency and some other currency or combination of currencies. The discussion here does not pertain to those central banks.

(7) The *Bank of Canada Act* is available on-line at: http://www.bankofcanada.ca/pdf/act_loi_boc_bdc.pdf.

(8) In 1991, the federal government attempted to redefine the Bank of Canada's legislated mandate to a narrower, inflation-only mandate. This effort was eventually rejected.

(9) Under the *Bank of Canada Act*, the Bank of Canada takes its directives from the Department of Finance. In 2001, the Bank of Canada and the Department of Finance agreed to extend the Bank's mandate of keeping inflation within a 1% to 3% range through to the end of 2006. In a press release announcing the renewal of this inflation target, available at http://www.fin.gc.ca/news01/01-050e.html, the Department of Finance said that creating a stable, low-inflation environment in which business can make economic decisions was "[t]he best contribution monetary policy can make" to securing the Bank of Canada's broader mandate.

(10) Coins are issued by the Royal Canadian Mint. It is important to distinguish between physical money (i.e., bills and coins), which can be created only by the Bank of Canada, and credit money, which is created by the chartered banks whenever they extend new loans.

federal government, where seigniorage is defined as the difference between the interest earned on the federal government's securities portfolio held by the Bank of Canada and the costs of producing and distributing bank notes.(11)

Third, and in a related fashion, the central bank advises the federal government on how much debt it should issue and when. In connection with this function, the central bank also maintains bondholder records and makes payments on behalf of the federal government for interest and debt redemption.

Fourth, the Bank of Canada is *the* lender-of-last-resort in the event of a large-scale financial or economic crisis. While this function has not been necessary of late,(12) the U.S. Federal Reserve – the U.S. counterpart of the Bank of Canada – played a pivotal lender-of-last-resort role in helping the U.S. economy recover from the aftermath of 11 September 2001 and in earlier crises, such as the collapse of Long-Term Capital Management, which threatened the stability of the U.S. financial system, and the 1987 stock market crash, which posed similar risks.(13)

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(11) The federal government is the sole shareholder of the Bank of Canada. As such, any interest it pays to the Bank of Canada is interest it pays to itself. At the end of each fiscal year, the Bank of Canada transfers net interest revenue – i.e., interest revenue generated after accounting for its operating costs – back to the federal government. These annual transfers are recorded in the *Public Accounts of Canada* as a "Return on Investment."

(12) There are two components to the Bank of Canada's lender-of-last-resort function. The first is called the emergency lending facility (ELA). The best-known and most recent uses of the ELA involved loans to two western Canadian banks – the Canadian Commercial Bank and the Northland Bank of Canada – in the 1980s. Despite the emergency assistance, both banks were eventually liquidated, although the Bank of Canada's financial assistance probably helped prevent a more widespread panic that could have hurt the overall financial system. The second lender-of-last-resort function is called the standing liquidity facility (SLF). It is used on a routine basis for overnight or other very short-term collateralized loans at the bank rate. Note that while the SLF is available on a routine, daily basis, most financial institutions will first try to borrow from other financial institutions because these funds can usually be obtained at rates lower than the bank rate.

(13) An economist at the Kansas City Federal Reserve Bank described the policy response to 11 September 2001 in the following terms: "Monetary policy responded quickly to the crisis by supplying an unprecedented amount of liquidity to the financial system. Discount window borrowing on 5 September, the Wednesday before the attack, totalled $195 million. On the day after the attack, 12 September, it peaked at a record $45.6 billion, and a week later it had receded to $2.7 billion. On the day after the attack, the Open Market Desk at the Federal Reserve Bank of New York injected $38 billion in liquidity through overnight repurchase agreements. … Importantly and more basically, the Federal Reserve remained open and operating in the aftermath of the attacks to ensure the continuation of eight vital payment services, including electronic transfers, check processing and currency distribution. On a longer-term basis, the Federal Open Market Committee [FOMC], the Fed's principal policymaking body, further eased the stance of monetary policy. On 17 September, before the reopening of the stock markets, the FOMC lowered the federal funds rate target and the Board of Governors lowered the discount rate by 50 basis points. Then, on 2 October, the FOMC again lowered rates another 50 basis points. The federal funds rate target, at 2.5%, was reduced to the lowest level since the 1960s. The discount rate, at 2.0%, was reduced to the lowest level since the 1950s. Partly as a result of the Federal Reserve's prompt actions, financial markets appear to now be operating smoothly" (George Kahn, "The Economic Outlook and Monetary Policy Before and After September 11, 2001," Presentation to the Oklahoma Economic Forums, Federal Reserve Bank of Kansas City, October 2001, available at: http://www.kc.frb.org/spch&bio/oklahoma2001/ok2001doc.pdf).

Fifth, the Bank of Canada is the clearing house where banks and other members of the payments system settle mutual debts. These debts arise, for example, whenever an individual writes a cheque on his or her account. When the payee deposits the cheque in his or her account, that account is immediately credited for the amount of the cheque – but he or she will be able to access the funds only after the payor's bank has transferred them to the payee's account via accounts held at the Bank of Canada. With respect to its role as a clearing house and as a lender-of-last-resort, the Bank of Canada is also responsible – under the *Payment Clearing and Settlement Act* – for regulating clearing and settlement systems in order to control what is known as "systemic" risk – the risk that a small failure at one financial institution may translate into a much bigger, system-wide problem.(14) The sixth, and arguably most important, function of the Bank of Canada is to help determine the price of money, i.e., "the" interest rate.(15) This sixth function is discussed in more detail below.

## SETTING THE PRICE OF MONEY

The Bank of Canada's targeted interest rate is set on eight policy announcement dates each year(16) and exerts influence on the spectrum of interest rates. Figure 1 shows how a range of interest rates, including five-year mortgage rates, prime lending rates for businesses, and rates on guaranteed investment certificates, tend to move in concert with changes in the bank rate, a policy variable that helps the Bank of Canada achieve its targeted overnight interest rate.

While there is debate about the extent to which changes in the Bank of Canada's target for the overnight interest rate affect the full spectrum of interest rates – some say the Bank of Canada takes its cue from the markets, while others say the markets generally follow the Bank of Canada – both the financial media and financial markets devote considerable attention to

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(14) A recent example of "systemic risk" is the electrical blackout in the summer of 2003 in Ontario and parts of the northeastern United States. What started out as a relatively small, localized problem at one Ohio utility quickly spread to affect millions of people from New York City to Toronto.

(15) At various points, this text speaks of "the" interest rate as if there were only one single, regulating interest rate in the economy. In reality, there is a spectrum of interest rates, from the overnight rate, which is under the control of the Bank of Canada, through to market-determined interest rates such as the 3-month Treasury Bill rate, the 1-year, 10-year and 30-year bonds, mortgage rates, credit card rates, and rates on automotive leases and loans.

(16) In 2004, these are 20 January, 2 March, 13 April, 8 June, 20 July, 8 September, 19 October and 7 December.

interpreting the Bank of Canada's behaviour as well as its expected behaviour. A Statistics Canada report showing stable inflation, for example, will usually elicit a comment to the effect that the central bank will be unlikely to change its target for the overnight interest rate at its next scheduled policy announcement date.(17) Statistical reports on economic growth, employment, capacity utilization, exports, imports or sharp changes in the value of the Canadian dollar are also likely to include some mention of the impact these economic data are likely to have on the central bank's next policy announcement.(18)

These same reports and commentaries also pay heed to speeches made by Bank of Canada Governor David Dodge and policy documents, working papers and other information published by the central bank, all in an effort to glean some insight into what the central bank will do on its next scheduled policy announcement date. The media and policy attention to the Bank of Canada recently culminated in the creation of the Monetary Policy Council, a group of 12 economists assembled by the C. D. Howe Institute "to spark debate on Bank of Canada decisions."(19) The central bank itself has, in recent years, endeavoured to make its intentions clearer by, for example, publishing eight policy announcement dates and by making more of an effort to share its analysis, intentions and even the comments of its Governor, David Dodge, with the public and Members of Parliament.(20)

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(17) On 19 November 2003, for example, Statistics Canada reported that inflation in October 2003 was 1.6%, down from 2.2% in September 2003. The following day, the Canadian Press reported that the October 2003 inflation reading meant that "the Bank of Canada … won't be in any rush to change its key policy interest rate of 2.75% at its Dec. 2 rate-setting meeting." See Canadian Press, "Inflation Rate Dipped Last Month," *The Daily News* [Halifax], 20 November 2003, p. 24. Similarly, *The Globe and Mail* quoted investment firm BMO Nesbitt Burns as saying that "[a] core reason to believe that the bank will be in absolutely no hurry to follow the tightening lead of the Bank of England and the Reserve Bank of Australia is that inflation is now below the bank's target, and headed lower over the next few months." See John Heinzl, "At the bell," *The Globe and Mail*, 19 November 2003, p. B12.

(18) A stronger Canadian dollar and a (related) fall in exports, for example, prompted one analyst to argue that he expected the Bank of Canada to reduce the target for its overnight rate by one-half of a percentage point over the next three months. See Marian Stinson, "Rising dollar eats at exports; rate cut seen in near future," *The Globe and Mail*, 13 December 2003, p. B3.

(19) Marian Stinson, "Economists Recommend Quarter-Point Rate Cut," *The Globe and Mail*, 29 August 2003, p. B1.

(20) See, for example, the profile of Dodge in *The Globe and Mail*'s *Report on Business* magazine (Konrad Yakabuski, "The Buck Stops Here," January 2003). The article interprets Dodge's willingness to allow the profile as a sign of the Bank of Canada's new openness: "He is transforming the institution – secretive, stuffy and doctrinaire, the financial-sector equivalent to Freemasonry – into a dynamic and increasingly open one. He is the first governor to grant an in-depth one-on-one interview to *Report on Business* magazine – scrubbing an unwritten central-bank rule."

## THE IMPACT OF INTEREST RATES ON THE ECONOMY

To the extent that it influences the spectrum of interest rates, the Bank of Canada affects economic growth in four main ways or through what are known as monetary policy "channels." Generally speaking, changes in the Bank of Canada's target for the overnight interest rate take 18 to 24 months to take full effect, i.e., to work their way thoroughly through the economy and either encourage or discourage economic growth and hence inflation.(21)

### A. The Bank Lending Channel

As discussed earlier, changes in the overnight interest rate tend to affect a variety of interest rates, including prime lending rates and mortgage rates. If the Bank of Canada wants to promote economic growth, it will lower the target for its overnight rate with the expectation that this reduction will lead to lower borrowing rates, which in turn might make home ownership, car purchases and other "big ticket" items more affordable for a larger number of people. Conversely, if the Bank of Canada believes economic growth is unsustainable and is therefore likely to result in an increase in inflation beyond its 1% to 3% target range, it will increase the target for its overnight interest rate.(22)

### B. The Wealth Effect Channel

Changes in interest rates also have "wealth effects." These effects occur through two principal channels, namely, demand for financial assets and demand for housing. To understand these effects, it is important to note that the interest rate can be interpreted as the

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(21) Bank of Canada, *The Transmission of Monetary Policy*, available at: http://bankofcanada.ca/en/backgrounders/bg-p7.htm.

(22) While the idea and measurement of "capacity growth" is a subject of dispute in economics, the Bank of Canada generally sides with those who believe that, at least in the short term (a year or less), the economy can grow only so fast before inflation increases. From this perspective, increased inflation might result from firms which, in their efforts to meet consumer demand, increase production in less efficient plants, push technological limits in their most modern plants (thereby incurring higher maintenance and repair costs), hire more workers (thereby increasing wage pressures in the labour market in general) or pay more overtime for their existing pool of workers. It is generally assumed that because firms want to preserve their profit margins, they will pass these higher costs on to consumers in the form of higher prices for goods or services. This strategy may not always be feasible, however, because of market conditions: firms in competitive markets where technological advantages are not evenly distributed may be less able to pass on these higher costs.

opportunity cost of money or credit. All other things being equal, a fall in interest rates means that individuals sacrifice less interest income (on their deposit accounts or bond investments) whenever they hold cash in their wallets or spend it on goods and services. Conversely, an increase in interest rates means that money and credit become more expensive – holding cash in a wallet, or spending it, becomes increasingly costly in terms of forgone interest revenue.

Assume that the central bank lowers its target for the overnight interest rate because it is concerned about sluggish economic growth. Next, assume that the lower rate results in not only lower mortgage rates but also an increase in bond prices, as it has in the past. These changes have several wealth-effect repercussions. First, lower mortgage rates make home ownership more affordable for a broader segment of the population. Second, lower rates encourage homeowners to "ratchet up" their home-owning ambitions and purchase more expensive houses. To the extent that this happens, existing homeowners enjoy a "wealth effect" because the increased demand for housing means that the value of their home increases without any action on their part. They can use this increased wealth to obtain new or additional bank financing for other purchases, perhaps even more homes.

Higher bond prices and lower interest rates in general have several effects on financial assets. First, they generate windfall gains to existing bond holders, much as a drop in interest rates generates windfall gains to existing homeowners. Bondholders can leverage this increased wealth to obtain lines of credit or loans to make additional purchases. Second, lower rates tend to make equities and other non-debt financial assets more attractive. This is what some say happened in the 1990s, when low interest rates resulted in low returns on government and corporate bonds, which in turn compelled an increasing number of investors to switch to shares, where the returns were presumed to be higher. This became something of a self-fulfilling prophecy until stock market prices reached unjustifiably high levels relative to corporate earnings and prices started falling again. In any case, during the period of rapid stock price increases, many investors were able to leverage the perceived higher value[(23)] of their stock share holdings into home mortgages, car loans and other forms of debt that they then used to make additional purchases.

(23) These were "perceived" higher values because they become "real" higher values only when the underlying equities are sold. This is the distinction between a "paper profit" and a realized profit.

### C. The Exchange Rate Channel

Interest rates can affect the value of a nation's currency: an increase in Canadian interest rates over and above foreign rates can strengthen the domestic currency as foreign (and domestic) investors are increasingly drawn to the domestic currency. While the Bank of Canada says it generally does not alter interest rates in order to affect the price of the currency except in cases of major international crises, it has in the past suggested that interest rate changes were motivated by exchange-rate fluctuations. One example of this kind of intervention occurred during the 1997-1998 Asian financial crisis, when the Bank of Canada increased interest rates to slow a fall in the Canadian dollar.(24)

### D. Other Monetary Policy Channels

Changes in interest rates have other, less direct and immediate effects on the economy. For example, highly indebted individuals, corporations and countries can quickly become insolvent when interest rates exceed the growth rate of income, profits or gross domestic product (GDP). In short, if an individual's, firm's or government's interest costs are growing more quickly than the ability to generate additional revenue to cover those costs, he, she or it will eventually become insolvent.(25) Thus, increasing interest rates in a period of slow economic growth could cause an increase in personal and corporate bankruptcies.

A policy of targeting inflation by changing the overnight interest rate also affects the distribution and redistribution of income among citizens, and particularly between creditors and debtors. One of the main reasons the central bank targets inflation is that inflation erodes the real (i.e., inflation-adjusted) value of fixed-income investments (i.e., bonds, annuities, guaranteed-income securities, etc.) A dollar of investment income tomorrow is worth less than it is today if inflation is above zero. Inflation above zero means that people who save are

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(24) For a discussion, see the Bank of Canada backgrounder "The Exchange Rate," available at: http://bankofcanada.ca/en/backgrounders/bg-e1.htm.

(25) While there is little question that municipal and provincial/territorial governments can go bankrupt, there is some dispute about whether the federal government, which is sovereign, can really go bankrupt because it always retains the ability – through the Bank of Canada – to "print" as much money as necessary to pay debt denominated in domestic currency. The act of "printing money" to pay debt is usually condemned by economists because of its potential to cause an increase in inflation, which would ultimately undermine the value of the debt held by private citizens. Note also that most nations that have "gone bankrupt" from the perspective of lenders are those that have borrowed heavily in foreign currency. Argentina, which pegged its currency to the U.S. dollar during most of the 1990s, is a case in point.

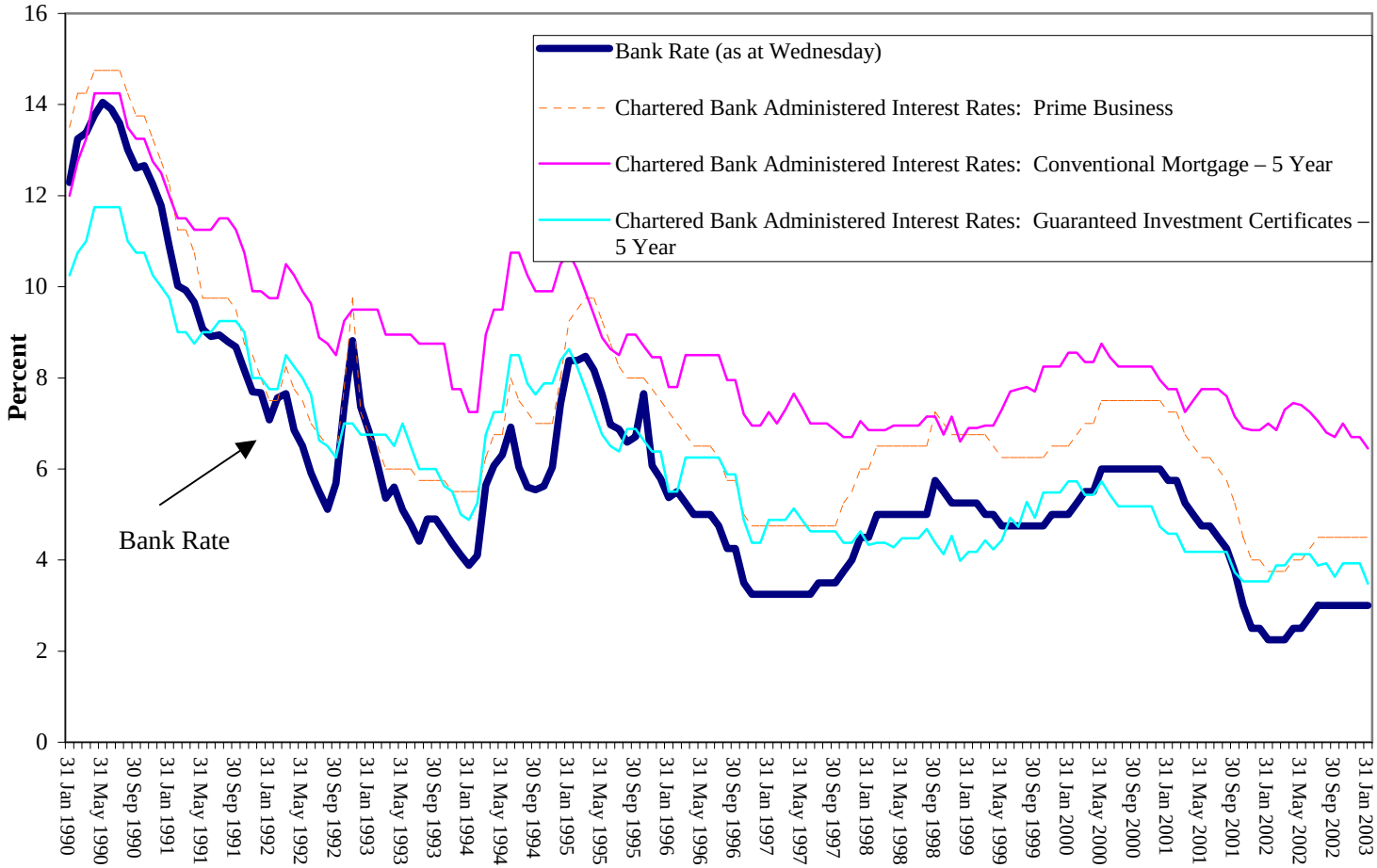
"punished" by high inflation while those who borrow are rewarded. The corollary to this kind of argument, of course, is the belief that low or no inflation is neutral across society, not benefiting any one person or class of people.

By controlling inflation through its manipulation of the overnight interest rate and through the impact of this change on other interest rates, the central bank also affects wage-setting behaviour, particularly in unionized organizations where negotiations over wage demands are anchored on expected inflation. Similarly, a host of tax and spending policies are tied to the inflation rate, including income tax brackets, employment insurance payments, social security payments, and fiscal transfers to the provinces and territories from the federal government.

## CONCLUSION

Judging by media interest in the Bank of Canada, many believe, or at least act as though they believe, that the central bank holds great influence over the economy through its ability to determine the outcome of the overnight interest rate. The Bank of Canada's role as sole issuer of the currency, manager of the federal debt, lender-of-last-resort, clearing house and, most importantly, influencer of interest rates, suggests that this interest is not misplaced.

**Figure 1: The Bank Rate and Its Relationship to Interest Rates Set by the Chartered Banks**




Source: Bank of Canada, http://www.bankofcanada.ca/en/interest-look.htm.

Note: The Bank rate is the rate at which the Bank of Canada lends money to financial institutions on an overnight basis. In practice, however, the Bank rate is used only infrequently, as most banks lend and borrow between themselves on a daily basis somewhere between the Bank rate and the Bank of Canada's borrowing rate.