appendix to chapter 2

Financial Market Instruments

Here we examine the securities (instruments) traded in financial markets. We first focus on the instruments traded in the money market and then turn to those traded in the capital market.

Money Market Instruments

Because of their short terms to maturity, the debt instruments traded in the money market undergo the least price fluctuations and so are the least risky investments. The money market has undergone great changes in the past three decades, with the amount of some financial instruments growing at a far more rapid rate than others.

The principal money market instruments are listed in Table 1 along with the amount outstanding at the end of 1970, 1980, 1990, and 2002.

Government of Canada Treasury Bills. These short-term debt instruments of the Canadian government are issued in 1-, 3-, 6-, and 12-month maturities to finance the federal government. They pay a set amount at maturity and have no interest payments, but they effectively pay interest by initially selling at a discount, that is, at a price lower than the set amount paid at maturity. For instance, you might pay $9,000 in May 2004 for a one-year treasury bill that can be redeemed in May 2005 for $10,000.

Treasury bills are the most liquid of all the money market instruments, because they are the most actively traded. They are also the safest of all money market instruments, because there is almost no possibility of *default*, a situation in which the party issuing the debt instrument (the federal government, in this case) is unable to make interest payments or pay off the amount owed when the instrument matures. The federal government is always able to meet its debt obligations, because it can raise taxes to pay off its debts. Treasury bills are held mainly by banks, although households, corporations, and other financial intermediaries hold small amounts.

Certificates of Deposit A *certificate of deposit* (CD) is a debt instrument sold by a bank to depositors that pays annual interest of a given amount and at maturity pays back the original purchase price. CDs are often negotiable, meaning that they can be traded, and in bearer form (called **bearer deposit notes**), meaning that the buyer's name is neither recorded in the issuer's books nor on the security itself. These negotiable CDs are issued in multiples of $100 000 and with maturities of 30 to 365 days, and can be resold in a secondary market, thus offering the purchaser both yield and liquidity.

Chartered banks also issue non-negotiable CDs. That is, they cannot be sold to someone else and cannot be redeemed from the bank before maturity without paying a substantial penalty. Non-negotiable CDs are issued in denominations ranging from

$5000 to $100 000 and with maturities of 1 day to 5 years. They are also known as **term deposit receipts** or **term notes**.

CDs are also an extremely important source of funds for trust and mortgage loan companies. These institutions issue CDs under a variety of names such as, for example, DRs (Deposit Receipts), GTCs (Guaranteed Trust Certificates), GICs (Guaranteed Investment Certificates), and GIRs (Guaranteed Investment Receipts).

Commercial Paper. *Commercial paper* is an unsecured short-term debt instrument issued in either Canadian dollars or other currencies by large banks and well-known corporations, such as General Motors and DaimlerChrysler. Because commercial paper is unsecured, only the largest and most creditworthy corporations issue commercial paper. The interest rate the corporation is charged reflects the firm's level of risk. The interest rate on commercial paper is low relative to those on other corporate fixed-income securities and slightly higher than rates on government of Canada treasury bills.

Finance and commercial paper are issued in minimum denominations of $50 000 and in maturities of 30 to 365 days for finance paper and 1 to 365 days for commercial paper. Most finance and commercial paper is issued on a discounted basis. Chapter 10 discusses why the commercial paper market has had such tremendous growth.

Banker's Acceptances. These money market instruments are created in the course of carrying out international trade and have been in use for hundreds of years. A *banker's acceptance* is a bank draft (a promise of payment similar to a cheque) issued by a firm, payable at some future date, and guaranteed for a fee by the bank that stamps it "accepted." The firm issuing the instrument is required to deposit the required funds into its account to cover the draft. If the firm fails to do so, the bank's guarantee means that it is obligated to make good on the draft. The advantage to the firm is that the draft is more likely to be accepted when purchasing goods abroad, because the foreign exporter knows that even if the company purchasing the goods goes bankrupt, the bank draft will still be paid off. These "accepted" drafts are often resold in a secondary market at a discount and so are similar in function to treasury bills. Typically,

Table 1 Principal Money Market Instruments

	Amount Outstanding (in millions)			
Type of Instrument	1970	1980	1990	2002
Treasury bills				
Government of Canada	2 762	13 709	113 654	87 604
Provincial governments	428	905	12 602	21 022
Municipal governments	25	113	514	177
Short-term paper				
Bankers acceptances	291	4 874	46 738	44 882
Commercial paper	588	2 555	12 971	21 503

Source: Statistics Canada Cansim II series V37377, V122256, V122257, V122635, and V122652.

they are held by many of the same parties that hold treasury bills, and the amount outstanding has experienced phenomenal growth.

The phenomenal growth in banker's acceptances in Canada is due to the growth of the Canadian money market and the fact that Canadian chartered banks enjoy stronger credit ratings than all but the largest corporations. Moreover, revisions in the Bank Act have removed certain restrictions regarding the issuance of banker's acceptances and the banks have reduced the stamping fees that they charge for banker's acceptances—these fees vary from 0.20% to 0.75%.

Repurchase Agreements. *Repurchase agreements*, or *repos*, are effectively short-term loans (usually with a maturity of less than two weeks) in which treasury bills serve as *collateral*, an asset that the lender receives if the borrower does not pay back the loan. Repos are made as follows: a large corporation, such as General Motors, may

Following the Financial News

Money Market Rates

The Globe and Mail and the *National Post* publish daily a listing of interest rates on many different financial instruments. In *The Globe and Mail: Report on Business*, this listing can be found in the "Money Rates" coloumn.

The interest rates in the "Money Rates" column that are discussed most frequently in the media are as follows:

Bank rate: The interest rate charged by the Bank of Canada on loans made to members of the Canadian Payments Association.

Target overnight rate: The overnight rate that the Bank of Canada is targeting at the midpoint of the operating band for the overnight rate.

Prime rate: The base interest rate on corporate bank loans, an indicator of the cost of business borrowing from banks.

Treasury bill rates: The interest rates on government of Canada treasury bills, an indicator of general interest rate movements.

Selected U.S. interest rates: Selected U.S. interest rates such as the federal funds rate, prime rate, and commercial paper rate. These are indicators of general interest rate movements in the United States.

MONEY RATES

ADMINISTERED	
Bank of Canada	2.50%
Target overnight rate	2.25%
Central bank call range	2.00-2.50%
Canadian prime	4.00%

MONEY MARKET	
(for transactions of $1-million or more)	
3-month treasury bills	2.45%
6-month treasury bills	2.67%
1-year treasury bills	3.37%
10-year Canada bonds	5.69%
30-year Canada bonds	5.95%
1-month banker's accept.	2.41%
2-month banker's accept.	2.52%
3-month banker's accept.	2.65%
Commercial Paper (R-1 low)	
1-month	2.41%
3-month	2.68%
Call money	2.25%

Bloomberg News

UNITED STATES

NEW YORK (AP) – Money rates for Thursday as reported by Moneyline Telerate as of 4 p.m.:
Prime Rate: 4.75
Discount Rate: 1.25
Broker call loan rate: 3.50
Federal funds market rate: High 1.8125; low 1.8125; last 1.8125
Dealers commercial paper: 30-180 days: 1.79-1.95
Commercial paper by finance company: 30-270 days: 1.90-2.09
Bankers acceptances dealer indications: 30 days, 1.84; 60 days, 1.85; 90 days, 1.86; 120 days, 1.91; 150 days, 1.99; 180 days, 2.04
Certificates of Deposit Primary: 30 days, 1.48; 90 days, 1.41; 180 days, 1.59
Certificates of Deposit by dealer: 30 days, 1.82; 60 days, 1.83; 90 days, 1.84; 120 days, 1.89; 150 days, 1.97; 180 days, 2.03
Eurodollar rates: Overnight, 1.75-1.81; 1 month, 1.75-1.88; 3 months, 1.75-1.88; 6 months, 2.00-2.13; 1 year, 2.56-2.69
London Interbank Offered Rate: 3 months, 1.91; 6 months, 2.12; 1 year, 2.71
Treasury Bill auction results: average discount rate: 3-month as of May. 13: 1.750; 6-month as of May 13: 1.870
Treasury Bill annualized rate on weekly average basis, yield adjusted for constant maturity, 1-year as of May. 13: 2.31
Treasury Bill market rate, 6 Mos: 1.85-1.84
Treasury Note market rate, 10-year: 5.18

Source: The Globe and Mail: Report on Business, May 17, 2002, p. B21. Reprinted with permission.

have some idle funds in its bank account, say $1 million, which it would like to lend for a week. GM uses this excess $1 million to buy treasury bills from a bank, which agrees to repurchase them the next week at a price slightly above GM's purchase price. The effect of this agreement is that GM makes a loan of $1 million to the bank and holds $1 million of the bank's treasury bills until the bank repurchases the bills to pay off the loan. Repurchase agreements are a fairly recent innovation in financial markets, having been introduced in 1969. They are now an important source of bank funds (over $400 billion). The most important lenders in this market are large corporations.

Overnight Funds. These are typically overnight loans by banks to other banks. The *overnight funds* designation is somewhat confusing, because these loans are not made by the federal government or by the Bank of Canada, but rather by banks to other banks. One reason why a bank might borrow in the overnight funds market is that it might find it does not have enough settlement deposits at the Bank of Canada. It can then borrow these balances from another bank with excess settlement balances.

The overnight market is very sensitive to the credit needs of the deposit-taking institutions, so the interest rate on overnight loans, called the overnight funds rate, is a closely watched barometer of the tightness of credit market conditions in the banking system and the stance of monetary policy. When it is high, it indicates that the banks are strapped for funds, whereas when it is low, banks' credit needs are low.

Capital Market Instruments

Capital market instruments are debt and equity instruments with maturities of greater than one year. They have far wider price fluctuations than money market instruments and are considered to be fairly risky investments. The principal capital market instruments are listed in Table 2, which shows the amount outstanding at the end of 1970, 1980, 1990, and 2002.

Table 2 Principal Capital Market Instruments

	Amount Outstanding (in millions)			
Type of Instrument	1970	1980	1990	2002
Corporate stocks (market value)	24 761	42 541	109 888	268 719
Residential mortgages	17 139	90 542	243 737	479 814
Corporate bonds	11 307	30 004	72 850	245 238
Government of Canada securities (marketable)	9 772	27 862	124 577	281 638
Bank commercial loans	11 299	58 751	102 574	122 433
Consumer loans	11 439	42 741	97 460	217 881
Nonresidential and farm mortgages	3 189	15 129	56 143	52 271

Source: Statistics Canada Cansim II series V122642, V122746, V122640, V37378 V122631, V122707, V122656, V122657, V122658, V122659, V800015, and the authors' calculations.

Stocks. *Stocks* are equity claims on the net income and assets of a corporation. Their value was $268 billion at the end of 2002. The amount of new stock issues in any given year is typically quite small—less than 1% of the total value of shares outstanding. Individuals hold around half of the value of stocks; pension funds, mutual funds, and insurance companies hold the rest.

Mortgages. *Mortgages* are loans to households or firms to purchase housing, land, or other real structures, where the structure or land serves as collateral for the loans. The mortgage market is the largest debt market in Canada, with the amount of residential mortgages (used to purchase residential housing) outstanding more than ninefold the amount of commercial and farm mortgages. Trust and mortgage loan companies and credit unions and *caisses populaires* were the primary lenders in the residential mortgage market until 1967. The revision of the Bank Act in 1967, however, extended the authority of chartered banks to make conventional residential mortgage loans and chartered banks have entered this market very aggressively in the last two decades. In fact, their market share of residential mortgages has increased from about 50% in 1989 to about 65% in 2002.

Banks and life insurance companies make the majority of commercial and farm mortgages. The federal government also plays an active role in the mortgage market via the Canada Mortgage and Housing Corporation (CMHC), which provide funds to the mortgage market by selling bonds and using the proceeds to buy mortgages. An important development in the residential mortgage market in recent years is the mortgage-backed security (see Box 1).

Box 1

Mortgage-Backed Securities

A major change in the residential mortgage market in recent years has been the creation of an active secondary market for mortgages. Because mortgages have different terms and interest rates, they are not sufficiently liquid to trade as securities on secondary markets. To stimulate mortgage lending, in late 1986 the government of Canada introduced the concept of a pass-through *mortgage-backed security*, patterned after the U.S. Government National Mortgage Association (GNMA, called “Ginnie Mae”). Mortgage-backed securities are not government of Canada securities but they are guaranteed by the Canada Mortgage and Housing Corporation (CMHC)—a federal government agency.

Under this program, private financial institutions such as chartered banks, trust and mortgage loan companies, and credit unions and *caisses populaires* gather a group of residential first mortgages with similar interest rates and terms to maturity (usually five years) into a bundle (of, say, $1 million). These mortgages must be individually guaranteed under the National Housing Act. This bundle is then sold as a security to a third party, usually a large institutional investor such as a pension fund. When individuals make their mortgage payments to the financial institution, the financial institution passes the payments through to the owner of the security by sending a cheque for the total of all payments. Because CMHC guarantees the payments, these pass-through securities have a very low default risk and are very popular.

Mortgage-backed securities have been so successful that they have completely transformed the residential mortgage market. Throughout the 1970s, over 80% of residential mortgages were owned outright by trust and mortgage loan companies, credit unions and *caisses populaires*, and chartered banks. Now only a fraction is owned outright by these institutions, with the rest held as mortgage-backed securities.

Corporate Bonds. These are long-term bonds issued by corporations with very strong credit ratings. The typical *corporate bond* sends the holder an interest payment twice a year and pays off the face value when the bond matures. Some corporate bonds, called *convertible bonds*, have the additional feature of allowing the holder to convert them into a specified number of shares of stock at any time up to the maturity date. This feature makes these convertible bonds more desirable to prospective purchasers than bonds without it, and allows the corporation to reduce its interest payments, because these bonds can increase in value if the price of the stock appreciates sufficiently. Because the outstanding amount of both convertible and nonconvertible bonds for any given corporation is small, they are not nearly as liquid as other securities such as Government of Canada bonds.

Although the size of the corporate bond market is substantially smaller than that of the stock market, the volume of new corporate bonds issued each year is substantially greater than the volume of new stock issues. Thus the behaviour of the corporate bond market is probably far more important to a firm's financing decisions than the behaviour of the stock market. The principal buyers of corporate bonds are life insurance companies; pension funds and households are other large holders.

Government of Canada Medium- and Long-Term Bonds Medium-term bonds (those with initial maturities from 3 to 10 years) and long-term bonds (those with initial maturities greater than 10 years) are issued by the federal government to finance its deficit. Because they are the most widely traded bonds in Canada, they are the most liquid security traded in the capital market. They are held by the Bank of Canada, banks, households, and foreign investors.

These debt instruments are issued in either bearer or registered form and in denominations of $1000, $5000, $25 000, $100 000, and $1 million. In the case of **registered bonds**, the name of the owner appears on the bond certificate and is also recorded at the Bank of Canada. Some issues have the additional **call** or **redemption** feature of allowing them to be "called" on specified notice (usually 30 to 60 days).

Canada Savings Bonds These are non-marketable bonds issued by the government of Canada once a year, generally for about two weeks ending on November 1. *Canada Savings Bonds* (*CSBs*) are floating-rate bonds, available in denominations from $100 to $10 000, and offered exclusively to individuals, estates, and specified trusts. They are issued as registered bonds and can be purchased from financial institutions or through payroll savings plans.

CSBs are different from all other bonds issued by the government of Canada in that they do not rise or fall in value, like other bonds do. They have the valuable option of being redeemable at face value plus accrued interest, at any time prior to maturity, by being presented at any financial institution. In October 1998 the government of Canada introduced another type of bonds that are similar to CSBs—the Canada Premium Bonds (CPBs). CPBs offer a slightly higher coupon rate than the CSBs, but can be redeemed only once a year, on the anniversary of the issue date and during the month after that date.

Provincial and Municipal Government Bonds Provincial and municipal governments also issue bonds to finance expenditures on schools, roads, and other large programs. The securities issued by provincial governments are referred to as **provincial bonds** or **provincials** and those issued by municipal governments as **municipal bonds** or **municipals**—the securities issued by the federal government are referred to as

Canadas. Provincials and municipals are denominated in either domestic currency or foreign currencies, mostly U.S. dollars, Swiss francs, and Japanese yen. They are mainly held by trusteed pension plans, social security funds (predominantly the Canada Pension Plan), and foreigners.

Government Agency Securities These are long-term bonds issued by various government agencies such as the Ontario Municipal Improvement Corporation and the Alberta Municipal Financing Corporation to assist municipalities to finance such items as mortgages, farm loans, or power-generating equipment. The provincial governments guarantee many of these securities. They function much like Canadas, provincials, and municipals and are held by similar parties.

Consumer and Bank Commercial Loans. These are loans to consumers and businesses made principally by banks, but—in the case of consumer loans—also by finance companies. There are often no secondary markets in these loans, which makes them the least liquid of the capital market instruments listed in Table 2. However, secondary markets have been rapidly developing.