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Brealey 6CE
Solutions to Chapter 2

1. The story of RIM provides three examples of financing sources: equity investments by the founders of the company, loans from friends and family, and loans by governments. Other sources include reinvested earnings of the company and loans from banks and other financial institutions.

2. Yes. When the corporation retains cash and reinvests in the firm's operations, that cash is saved and invested on behalf of the firm's shareholders. The reinvested cash could have been paid out to the shareholders. By not taking the cash, these investors have reinvested their savings in the corporation. Individuals can also save and invest in a corporation by lending to, or buying shares in, a financial intermediary such as a bank or mutual fund that subsequently invests in the corporation.

3. *Money markets*, where short-term debt instruments are bought and sold.

   Foreign-exchange markets. Most trading takes place in over-the-counter transactions between the major international banks.

   Commodities markets for agricultural commodities, fuels (including crude oil and natural gas) and metals (such as gold, silver and platinum).

   Derivatives markets, where options and other derivative instruments are traded.

4. Buy shares in an exchange-traded fund (ETF) or a mutual fund. Both ETFs and mutual funds pool savings from many individual investors and then invest in a diversified portfolio of securities. Each individual investor then owns a proportionate share of the ETF or mutual fund's portfolio.

5. Defined contribution pension plans provide three key advantages as vehicles for retirement savings:

   - Professional management.
   - Diversification at low cost.
   - Pension plan contributions are tax-deductible, and taxes on the earnings in the fund are deferred until the fund's assets are distributed to retired employees.

6. Yes. Insurance companies sell policies and then invest part of the proceeds in corporate bonds and stocks and in direct loans to corporations. The returns from these investments help pay for losses incurred by policyholders.

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7. The largest institutional investors in bonds are insurance companies. Other major institutional investors in bonds are pension funds, mutual funds, and banks and other savings institutions. The largest institutional investors in shares are pension funds, mutual funds, and insurance companies.

8. The market price of gold can be observed from transactions in commodity markets. For example, gold is traded on the Comex division of the New York Mercantile Exchange. Look up the price of gold and compare it to $2,500/6 = $416.67 per ounce.

9. Financial markets provide extensive data that can be useful to financial managers. Examples include:

   - Prices for agricultural commodities, metals and fuels.
   - Interest rates for a wide array of loans and securities, including money market instruments, corporate and Canadian government bonds, and interest rates for loans and investments in foreign countries.
   - Foreign exchange rates.
   - Stock prices and overall market values for publicly listed corporations are determined by trading on the TSX, New York Stock Exchange, NASDAQ or stock markets in London, Frankfurt, Tokyo, etc.

10. The opportunity cost of capital is the expected rate of return offered by the best alternative investment opportunity. When the firm makes capital investments on behalf of the owners of the firm (i.e., the shareholders), it must consider the shareholders' other investment opportunities. The firm should not invest unless the expected return on investment at least equals the expected return the shareholders could obtain on their own by investing in the financial markets.

    The opportunity cost of capital for a safe investment is the rate of return that shareholders could earn if they invested in risk-free securities, for example in Government of Canada Treasury Bills.

11. When stockholders have access to modern financial markets and institutions, stockholders can readily avail themselves of the functions served by these markets and institutions: for example, transporting cash across time, risk transfer and diversification, liquidity, and access to payment mechanisms. Therefore, the objective of value maximization makes sense for stockholders because this is the only task stockholders require of corporate management. In addition, the financial markets provide the pricing mechanism and the information stockholders require in order to assess the performance of the firm's management in achieving this objective.

12. a. False. Financing could flow through an intermediary, for example.

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b. False. Investors can buy shares in a private corporation, for example.

c. True. Sale of insurance policies are the largest source of financing for insurance companies, which then invest a significant portion of the proceeds in corporate debt and equities.

d. False. There is no centralized FOREX exchange. Foreign exchange is traded over-the-counter.

e. False. The opportunity cost of capital is the expected rate of return that shareholders can obtain in the financial markets on investments with the same risk as the firm's capital investments.

f. False. The cost of capital is an *opportunity* cost determined by expected rates of return in financial markets. The opportunity cost of capital for risky investments is normally higher than the firm's borrowing rate.

13. Liquidity is important because investors want to be able to convert their investments into cash quickly and easily when it becomes necessary or desirable to do so. Should personal circumstances or investment considerations lead an investor to conclude that it is desirable to sell a particular investment, the investor prefers to be able to sell the investment quickly and at a price that does not require a significant discount from market value.

    Liquidity is also important to mutual funds. When the mutual fund's shareholders want to redeem their shares, the mutual fund is often forced to sell its securities. In order to maintain liquidity for its shareholders, the mutual fund requires liquid securities.

14. The key to the bank's ability to provide liquidity to depositors is the bank's ability to pool relatively small deposits from many investors into large, illiquid loans to corporate borrowers. A withdrawal by any one depositor can be satisfied from any of a number of sources, including new deposits, repayments of other loans made by the bank, bank reserves and the bank's debt and equity financing.

15. a. Investor A buys shares in a mutual fund, which buys part of a new stock issue by a rapidly growing software company.

    b. Investor B buys shares issued by the Bank of Saskatchewan, which lends money to a regional department store chain.

    c. Investor C buys part of a new stock issue by the Regional Life Insurance Company, which invests in corporate bonds issued by Neighborhood Refineries, Inc.

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16. Mutual funds and ETFs collect money from small investors and invest the money in corporate stocks or bonds, thus channeling savings from investors to corporations. The advantages of mutual funds and ETFs for individuals are diversification, professional investment management and record keeping.

17. In this situation, a "superior" rate of return is a rate of return that is greater than the rate of return investors could earn elsewhere in the financial markets from alternative investments with risk level equal to that of the "low-risk capital investment" described in the problem. Fritz (who is risk-averse) will applaud the investment because he can maintain the risk level he prefers while earning a "superior" return. Frieda (who is risk-tolerant) will applaud the investment because investors will be willing to pay more for the shares Frieda owns than they would have paid if the firm had not made this "low-risk capital investment." Frieda would be likely to sell her shares to a more risk-averse investor, and use the proceeds of her sale to invest in shares of a company with a very high rate of return, and commensurate high level of risk.

18. If you believe that the rate of return is truly guaranteed to be 8 percent, then the investment is very low risk. The relevant opportunity cost of capital for this investment is the rate of return that investors can earn in the financial markets from the safest investments, such as Canadian government securities and top-quality (AAA) corporate debt issues of equivalent term to maturity, ie. 30 years. The highest quality investments in Table 2.2 are AAA and paid 3.35% per year. AA-rated corporate debt is riskier than AAA-rate.

19. a. Since the government guarantees the payoff for the investment, the opportunity cost of capital is the rate of return on Canadian Government Treasury bills with one year to maturity (i.e., one-year Treasury bills).

    b. The opportunity cost for the investment under consideration by Pollution Busters, Inc. is 20%, the expected rate of return available on an investment in carbon. The sequester is expected to pay $115,000 on a $100,000 investment, a gain of $15,000. If the $100,000 was invested in the London Carbon Exchange, the expected payback is .2×$100,000, or $20,000. The purchase of additional sequesters is not a worthwhile capital expenditure. The same risk investment in the London Carbon Exchange produces an additional $5,000 ($20,000 - $15,000). This can also be expressed in terms of rates of return. Purchase of the additional sequesters is not a worth while capital investment because the expected rate of return is only 15 percent (i.e., a $15,000 gain on a $100,000 investment, $15,000/$100,000 = .15 or 15%), less than the 20% opportunity cost of capital.

20. Mutual funds; pension funds; venture capital firms; credit unions and caisses populaires.

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21. The link to the home page is http://ca.ishares.com/home.htm. As of September 2014, Barclays offers 105 Canadian ETFs, available for trading on the Toronto Stock Exchange. The 3 ETFs selected for examination here are: iShares™ CDN Fundamental Index ETF, iShares™ CDN Energy Sector Index Fund and iShares™ CDN Jantzi Social Index® Fund

1. iShares™ CDN Fundamental Index ETF
Index that this fund replicates: FTSE RAFI Canadian Index
MER: 0.72% of total assets
As of February 4, 2016: One year rate of return = -1.68%

Top 5 holdings as of December 31, 2015

% of funds	Stock
8.60%	ROYAL BANK OF CANADA
7.51%	TORONTO-DOMINION BANK
5.78%	BANK OF NOVA SCOTIA
5.02%	SUNCOR ENERGY INC.
4.87%	BANK OF MONTREAL

2. iShares™ S&P/TSX Capped Energy Index ETF
Index that this fund replicates: S&P®/TSX® Capped Energy Index
MER = .61% of total fund assets
As of February 4, 2016: One year rate of return = -4.12%

Top 5 Holdings as of December 31, 2015

% of funds	Stock
25.22%	SUNCOR ENERGY INC.
18.54%	CANADIAN NATURLA RESOURCES LTD.
8.17%	CENOVUS ENERGY INC.
6.42%	IMPERIAL OIL LIMITED
4.56%	CRESCENT POINT ENERGY CORP.

3. iShares™ CDN Jantzi Social Index® Fund
Index that this fund replicates: Jantzi Social Index
MER =.56% of total fund assets
As of February 4, 2016 One year rate of return = -2.09%

Top Holdings as of December 21, 2015

% of funds	Stock
12.27%	ROYAL BANK OF CANADA
11.20%	TORONTO-DOMINION BANK
7.50%	BANK OF NOVA SCOTIA

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6.83%	CANADIAN NATIONAL RAILWAY CO.
5.75 %	SUNCOR ENERGY INC.

22. For the purpose of this solution, we provide 3 mutual funds from RBC Global Asset Management

NOTE: Management Expense Ratio, MER, is the sum of management fees (the administrative costs and the wages and bonuses of fund managers) plus all other expenses charged to fund (marketing expense) divided by the fund's total assets.

1. RBC Asian Equity

Fund Objectives: The Fund seeks capital appreciation through equity securities issued by companies located in or having a principal business interest in any or all of the countries of Asia. These countries include Hong Kong, South Korea, China, Taiwan, Australia, New Zealand, Singapore, Malaysia, Thailand, the Philippines, Indonesia and Vietnam. This fund is affected by changing conditions of the markets in which they invest and the rate of exchange of foreign currencies against the Canadian dollar.

MER = 2.25% of fund's total assets

One-Year Return as at November 6, 2014: 6.80%

Benchmark index: MSCI AC Pacific Free Total Return Index ($ Cdn)

Top Holdings as at April 30, 2014

Company Name	Sector	Geographic Area	Asset Type	% of Total Assets
Toyota Motor Corp.	Automotive	Japan	Stock	2.70
Commonwealth Bank of Australia	Banking	Australia	Stock	2.30
Samsung Electronics	Electrical & Electronic	South Korea	Stock	2.20
SoftBank Corp.	Telecommunications	Japan	Stock	2.00
China Construction Bank Corp.	Banking	China	Stock	2.00
Jardine Matheson	Conglomerate	China	Stock	2.00
AIA Group	Insurance	China	Stock	1.90
Taiwan Semiconductor	Electrical &	Taiwan	Stock	1.90

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Manufacturing Co. Ltd. ADR	Electronic			
Bridgestone Corp.	Automotive Parts	Japan	Stock	1.80
Daikin Industries Ltd.	Air Conditioning	Japan	Stock	1.80

2. RBC Canadian Index

Fund Objectives: The Fund seeks to provide long-term capital growth by investing primarily in Canadian equity securities. The fund seeks to achieve returns similar to a generally recognized index of Canadian equity market performance, currently being The Toronto Stock Exchange 300 Total Return Index.

MER = 0.72% of total fund assets

One-Year Return as at November 6, 2014:19.50%

Benchmark Index: S&P/TSX Capped Composite Index

Top Holdings as at April 30, 2014

Symbol	Company Name	Sector	Geographic Area	Asset Type	% of Total Assets
RY-T	Royal Bank of Canada	Banks	Canada	Stock	5.90
TD-T	TD Bank	Banks	Canada	Stock	5.40
BNS-T	Bank of Nova Scotia	Banks	Canada	Stock	4.50
SU-T	Suncor Energy	Integrated Oils	Canada	Stock	3.50
CNR-T	Canadian National Railway	Transportation	Canada	Stock	3.00
BMO-T	Bank of Montreal	Banks	Canada	Stock	2.70
CNQ-T	Canadian Natural Resources	Oil and Gas Producers	Canada	Stock	2.70
VRX-T	Valeant Pharmaceuticals International Inc.	Pharmaceuticals	Canada	Stock	2.50
ENB-T	Enbridge Inc.	Energy	Canada	Stock	2.40
CM-T	Canadian Imperial Bank of Commerce Inc.	Banks	Canada	Stock	2.20

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3.RBC Jantzi Canadian Equity

Fund Objectives: To provide long-term capital growth. The fund invests primarily in equity securities of Canadian companies and follows a socially responsible approach to investing.

MER= 2.08%

One-Year Return as at November 6, 2014: 19.90%

Benchmark Index: S&P/TSX Total Return

Top Holdings as at April 30, 2014

Symbol	Company Name	Sector	Geographic Area	Asset Type	% of Total Assets
RY-T	Royal Bank of Canada	Banks	Canada	Stock	6.30
TD-T	TD Bank	Banks	Canada	Stock	5.50
BNS-T	Bank of Nova Scotia	Banks	Canada	Stock	4.90
SU-T	Suncor Energy	Integrated Oils	Canada	Stock	4.70
CNR-T	Canadian National Railway	Transportation	Canada	Stock	3.80
CNQ-T	Canadian Natural Resources	Oil and Gas Producers	Canada	Stock	3.80
	Cash & Cash Equivalents	N/A	Canada	Cash	3.30
BMO-T	Bank of Montreal	Banks	Canada	Stock	2.90
MFC-B	Manulife Financial Corp.	Oil and Gas Insurance	Canada	Stock	2.40
CM-T	Canadian Imperial Bank of Commerce Inc.	Banks	Canada	Stock	2.20

23. If you go into the website of any of Canada's large chartered banks (including The Royal Bank of Canada and Scotiabank) you will find that services are provided to three broad groups: individuals, small businesses, and corporations. The banks will typically provide a variety of banking, borrowing and investing, and insurance services to all three groups. Additional more sophisticated services, such as those

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pertaining to global banking services and industry solutions and international banking are provided to corporations and small businesses.

24. The information may be compiled by clicking on "asset class". You could also try "inside funds"Most of the information reported relates the performance of the fund. The "standard" tab reports the price per unit, price change from previous data and rates of return. The "short-term" tab gives the rates of return within the last 30 days and "long-term" tab gives the rates of return over 1 to 15 years. The "annual" tab reports the one-year rate of return for each of the past 7 years. The "quartile ranking" and the "5-star Ratings" both report how the funds performed relative to each other for various periods. For example, if the fund's return was among the top 25% of funds in this category, its quartile ranking is 1. The five star ranking is Globe Fund's ranking of the fund. Finally, the "key facts" tab reports certain details about the funds, including the dollar amount of its assets, its MER, the load type (fees charged when the funds are bought or sold), the minimum dollar amount an investor can invest and whether the fund qualifies to be included in an investor's registered retirement savings plan, RSP.

25. We compare the iShares CDN Capped Composite Index ETF with the RBC Canadian mutual fund:

Fund Name	Fund Type	MER	One year rate of return	Benchmark Index
iShares™ CDN Composite Index Fund	ETF	0.05%	2.36%	S&P®/TSX® Capped Composite Index
RBC Canadian Index	Mutual	2.06%	19.20%	S&P®/TSX® Capped Composite Index

Note the higher MER for the mutual fund than the ETF: 2.06% versus 0.05%. The rates of return differ substantially, but were taken at different dates.

iShares CDN Composite Index ETF

Top Holdings as of September 30, 2014

% of funds	Stock
6.19%	ROYAL BANK OF CANADA
5.47%	TORONTO-DOMINION BANK
4.52%	BANK OF NOVA SCOTIA
3.49%	CANADIAN NATIONAL RAILWAY COMPANY
3.18%	SUNCOR ENERGY INC.

RBC Canadian mutual fund

Top Holdings as at April 30, 2014

% of funds	Stock
7.70%	RBC CDN Small & Mid-Cap Resources Fund
6.00%	Royal Bank of Canada
5.40%	Toronto-Dominion Bank
4.80%	Bank of Nova Scotia
4.20%	Suncor Energy Inc.

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We compare iShares™ S&P/TSX Capped Energy Index ETF with the TD Energy Fund:

Fund Name	Fund Type	MER	One year rate of return	Benchmark Index
iShares™ ™ S&P/TSX Capped Energy Index ETF	ETF	0.60 %	1.91%	S&P®/TSX® Capped Energy Index
TD Energy Fund	Mutual	2.25%	12.01%	S&P/TSX Energy Sector Index

iShares™ S&P/TSX Capped Energy Index ETF

Top 5 Holdings as of September 30, 2014

% of funds	Stock
19.84%	SUNCOR ENERGY INC.
14.69%	CANADIAN NATURAL RESOURCES LTD.
7.51%	CENOVUS ENERGY INC.
5.47%	ENCANA
5.41%	CRESCENT POINT ENERGY CORP.

TD Energy Fund

Top Holdings as at June 30, 2014

% of funds	Stock
8.60%	Suncor Energy
7.50%	Canadian Natural Ressources Ltd.
4.80%	Cenovus Energy
4.10%	TransCanada Corp.
3.90%	Encana Corp.

Fund Name	Fund Type	MER	One year rate of return	Benchmark Index
iShares™ CDN Jantzi Social Index® ETF	ETF	.55%	2.10%	Jantzi Social Index
RBC Jantzi Canadian Equity	Mutual	2.06%	19.90%	S&P/TSX Total Return

iShares™ CDN Jantzi Social Index® Fund

Top Holdings as at September 30, 2014

% of funds	Stock
11.07%	ROYAL BANK OF CANADA

RBC Jantzi Canadian Equity

Top Holdings as at October 23, 2014

% of Total Assets	Stock
6.70%	Royal Bank of Canada

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9.78%	TORONTO-DOMINION BANK	5.60%	TD Bank
8.09%	BANK OF NOVA-SCOTIA	4.40%	Bank of Nova Scotia
6.24%	CANADIAN NATIONAL RAILWAY COMPANY	4.30%	Canadian National Railway Co.
5.70%	SUNCOR ENERGY INC.	3.50%	Suncor Energy Inc.

26. Even if the firm does not need to issue stock in any particular year, the stock market is still important to the financial manager. The stock price provides important information about how the market values the firm's projects to the extent that the market price of stock is determined by expected present value of future cash flows. For example, if the stock price rises considerably, managers might conclude that the market believes the firm's future prospects are bright. This might be a useful signal to go ahead with an investment such as an expansion of the firm's business.

    In addition, the fact that shares can be traded in the secondary market makes them more attractive to investors since investors know that, when they wish to, they will be able to sell their shares. This in turn makes them more willing to buy shares in a primary offering, and thus improves the terms on which firms can raise money in the equity market.

    The financial manager is concerned with the price of the stock because the market value of stock is a measure of shareholder wealth. The financial manager's goal is to maximize shareholder wealth.

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CHAPTER 2

FINANCIAL MARKETS AND INSTITUTIONS

CHAPTER IN PERSPECTIVE

This fifth edition expands the discussions on the contributions of financial markets and institutions to the growth of corporations and the productivity of overall economy. In this new edition the current chapter revisits agency problems in Section 2.2, *Agency Problems and Corporate Governance*, to emphasize the importance of corporate governance. Another addition to the new edition, Finance in Practice Box *Prediction Markets,* provides an interesting example on how market works. This example can also prepare the students for the later more in-depth discussion of efficient market hypothesis in Chapter 7.

The financial system is a significant part of the operating environment of any business, and especially a larger, public corporation, which is the primary focus of this text. Of course corporations "finance" in financial markets and have a constant "performance evaluation" from financial markets as told through securities prices. Corporations also "invest" in financial markets (marketable securities and equity investments), and increasingly use the derivative contracts traded in financial markets to manage risks of the business. The payments system, a part of the financial system, is an important means of managing cash flow for any business today, combining communications and computing technology to manage funds flows both "to" and "from" a company.

Investors and financial markets determine the required rate of return that corporate managers must earn on asset investments, so financial managers must constantly "assess" or interpret their "cost" of capital from capital market data. The concept of opportunity cost of capital is introduced in this chapter and will be an important part of the "value maximization" theme that runs throughout the text.

CHAPTER OUTLINE

2.1 THE IMPORTANCE OF FINANCIAL MARKETS AND INSTITUTIONS

2.2 THE FLOW OF SAVINGS TO CORPORATIONS

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The Stock Market

Other Financial Markets

Financial Intermediaries

Financial Institutions

Total Financing of Canadian Corporations

2.3 FUNCTIONS OF FINANCIAL MARKETS AND INTERMEDIARIES

Transporting Cash across Time

Risk Transfer and Diversification

Liquidity

The Payment Mechanism

Information Provided by Financial Markets

2.4 VALUE MAXIMIZATION AND THE COST OF CAPITAL

Value Maximization

The Opportunity Cost of Capital

2.5 THE CRISIS OF 2007-2009

2.5 SUMMARY

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TOPIC OUTLINE, KEY LECTURE CONCEPTS, AND TERMS

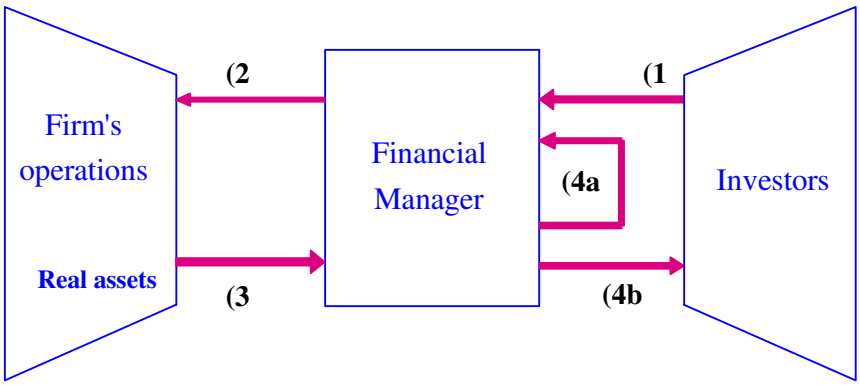
2.1 THE IMPORTANCE OF FINANCIAL MARKETS AND INSTITUTIONS

A. Financial market is one of the key factors to the modern economy. The history of Research in Motion shows the key role played by financial market.

B. Financial markets provide financing to the corporation's growth. A modern financial system offers financing in many different forms, depending on the company's age, growth rate and nature of its business. The Finance in Action article on page 35 illustrates how innovation in the financial sector has helped to finance business ventures in developing countries.

2.2 THE FLOW OF SAVINGS TO CORPORATIONS

A. Households and foreign investors provide most of the saving for corporate financing; financial markets and institutions provide the process and contracts to channel funds from savers to corporations (financial investment) for real investment. Figure 2.1 is an excellent graphic for this discussion.



B. Corporations (businesses) also generate cash from operations (cash in less cash out) for reinvestment in real assets. Smaller businesses are especially dependent upon internally generated funds.

The Stock Market

A. Funds are traded for securities, issued by corporations, in financial markets.

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1. The initial sale of securities or **initial public offering** (IPO), and receipt of cash to the corporation, is in the **primary market**.
2. Subsequent sale of securities in financial markets, between investors, are in **secondary markets**.

B. Common stocks of publicly traded companies are traded in stock or equity markets.

1. Trading takes place at physical exchanges, such as the Toronto Stock Exchange (TSX) in Canada or the New York Stock Exchange (NYSE) in the U.S. or between networks of dealers in the over-the-counter (OTC) markets such as the NASDAQ. Also, new alternate trading systems, such as Pure Trading, provide additional ways to trade securities.
2. Stocks of major corporations trade in many markets throughout the world on a continuous basis.

Other Financial Markets

A. Debt securities (contractual obligations to pay) are traded in the **fixed-income market** or bond markets.

B. The market for long-term debt and equity securities is called the **capital market**, whereas the market for short-term, high quality, liquid debt securities is called the **money market**.

C. Other financial asset (security) markets for immediate or spot or future delivery (foreign exchange, futures, options) and real assets (commodities) exist throughout the world.

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Financial Intermediaries

A. Savings may flow to real investment directly through financial markets or indirectly through financial intermediaries.

B. **Mutual funds** issue shares or units to savers and invest in a variety of portfolios of financial assets, providing professional management and diversification.

C. **Exchange-traded funds (ETF)** also raise funds by selling units to investors. Once the ETF is established, its units are listed for trading on stock exchanges. Investors can buy and sell the ETF units just as they can buy and sell shares of a corporation.

D. A financial investor (saver) may own corporate stock or securities directly (hold the shares) or indirectly through financial intermediaries, such as mutual funds and EFTs.

E. Pension funds, funds contributed by employers and/or employees for future retirement, are a significant financial intermediary today and a very large common stock investor.

Financial Institutions

A. Financial intermediaries that also provide payment, investing, lending, and risk management services, are called **financial institutions**.

B. The big six domestic chartered banks are Canada's most familiar financial institutions, accounting for about 88 percent of the country's bank industry assets and over 50 percent of the total domestic assets held by the financial sector. Other financial intermediaries include other domestic banks and foreign bank branches and subsidiaries, caisses populaires, credit unions, insurance companies, pension funds and trust companies.

C. Banks and insurance companies intermediate funds from savings to investment (two contracts), but also provide contracts for financial services (checking services and insurance).

Total Financing of Canadian Corporations

A. The capital market securities of Canadian corporations (bonds, debentures and shares) are owned by individuals and financial intermediaries from around the world. See Figure 2.3 and 2.4.

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2.3 FUNCTIONS OF FINANCIAL MARKETS AND INTERMEDIARIES

Financial markets and intermediaries provide "financing" for business by providing for the transfer or investment in corporate securities. In addition, they provide a variety of other economic functions to the corporation.

Transporting Cash across Time

A. Financial markets and institutions provide savers (cash inflow exceeding cash outflow for period) an opportunity to enter into contracts (financial investments) to transport purchasing power to future periods (retirement funds). Both initial principal and accumulated earnings on investments will be available for later.

B. Financial markets and institutions provide borrowers (cash inflow less than outflow for the period) an opportunity to contract with lenders (borrow) funds to be earned in later periods for use now. The interest paid on loans is the cost of transporting future income to present consumption.

Risk Transfer and Diversification

A. Financial markets and institutions (insurance companies) provide a means of contractually reducing or reallocating business and financial risk to others.

B. Insurance via insurance contracts may be available for pure, insurable risks (casualty risks) or risk may be hedged via futures, options, and swap contracts traded on exchanges or directly.

C. Holding assets in portfolios takes advantage of the opportunity to diversify away part of the risk of assets. When the authors mention investors in the text, it is assumed that they are well diversified.

Liquidity

A. Financial markets (ability to trade assets owned) and institutions (stored in financial assets or lines of credit) provide businesses liquidity. Liquidity, the ability to get to cash, is a direct function of time and transaction costs (direct and indirect).

B. Corporations may store liquidity in money market securities or issue money market securities (commercial paper) or buy bank CD's or establish a line of credit

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at a commercial bank.

C. The efficiency of the payments mechanism (process of paying for a transaction) provided by the financial system enhances trade of real goods and services and financial markets/institutions transactions.

The Payment Mechanism

A. Payment services provided by bands and other financial institutions allow firms and individuals to send and receive payments quickly and safely over long distance

Information Provided by Financial Markets

A. Information from financial markets aid the financial manager by providing a constant evaluation (pricing) of a corporation's securities. The pricing of securities imparts required rate of return information for new corporate investments (cost of capital) on a continuous basis.

B. A continuous flow of information about economic levels, commodity prices, interest rates and company stock prices aids the financial manager to make decisions that will best maximize the long-run value of the corporation.

2.4 VALUE MAXIMIZATION AND THE COST OF CAPITAL

Access to well-functioning financial markets and institutions allow the shareholders who differ in their risk-tolerance to share and transfer risks. Financial markets and institutions give shareholders the flexibility to manage their own saving and investment plans.

The Opportunity Cost of Capital

A. The **cost of capital** is the minimum acceptable of return needed on capital investments to maintain the current value of their securities. It is the minimum return demanded by investors for investments of a certain risk level available in the market.

B. The rates of return on investments outside the corporation set the minimum return for investment projects inside the corporation. In other words, the cost of capital for corporate investments is set by the rates of return on investment opportunities

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in financial markets – the *opportunity cost of capital***.**

C. Investment projects offering rates of return higher than the cost of capital add value to the firm. Projects offering rates of return less than the cost of capital actually subtract value and should not be undertaken.

2.5 THE CRISIS OF 2007-2009

A. The financial crisis of 2007–2009 raised many questions, but it settled one question conclusively: Yes, *financial markets and institutions are important.* When financial markets and institutions ceased to operate properly, the world was pushed into a global recession.

B. The financial crisis had its roots in the easy-money policies that were pursued by the U.S.Federal Reserve and other central banks following the collapse of the Internet and telecom stock bubble in 2000. Banks took advantage of this cheap money to expand the supply of *subprime mortgages* to low-income borrowers. Most subprime mortgages were then packaged together into *mortgage-backed securities* that could be resold. But, instead of selling these securities to investors who could best bear the risk, many banks kept large quantities of the loans on their own books or sold them to other banks. The crisis peaked in September 2008.

C. Few developed economies escaped the crisis. As well as suffering from a collapse in their own housing markets, many foreign banks had made large investments in U.S. subprime mortgages.

D. The banking crisis and subsequent recession left many governments with huge mountains of debt. By 2010 investors were becoming increasingly concerned about the position of Greece, where for many years government spending had been running well ahead of revenues.

E. After 4 years of financial turmoil, Greece finally began to recover. In 2013, the Greek government announced that both its unemployment rate and its debt-to-GDP ratio had declined. In November 2013, Moody's upgraded the government's bond rating for the first time since the beginning of the financial crisis.

2.6 SUMMARY

PEDAGOGICAL IDEAS

General Teaching Note – This is the second introductory chapter and continues on the "big picture" theme, this time emphasizing the financial environment. Students learn that

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corporations obtain “financing” in financial markets and undergo a constant process of monitoring and “performance evaluation” in such markets through, for instance, the pricing of their securities. Financial markets and intermediaries channel savings to corporations. This chapter introduces different types of financial markets, including the stock market as well as the markets for long term and short term debt. It is important to describe the different types of financial institutions and intermediaries operating in Canada highlighting their role and some of their unique features. For instance, you may want to discuss the banking sector wherein different banking institutions fall under different schedules under the Bank Act. For instance, Canada’s chartered banks fall under Schedule 1; what does this mean? Discuss the role of mutual funds, insurance companies, pension funds, credit unions and caisse populaires. Investors and financial markets determine the required rate of return that corporate managers must earn on asset investments, so financial managers must constantly "assess" or interpret their "cost" of capital from capital market data. As mentioned earlier, the concept of opportunity cost of capital is introduced in this chapter and will be an important part of the "value maximization" theme that runs throughout the text.

REVIEW OF LEARNING OBJECTIVES (with teaching tips and notes)

The **first learning objective** of this chapter is an understanding of how financial markets and institutions channel savings to corporate investment. Households and foreign investors provide most of the savings for corporate financing; financial markets and institutions provide the process and contracts to channel funds from savers to corporations for real investment. Figures 2.1 and 2.2 are an excellent graphics for facilitating this discussion.

> **Teaching Note: The Stock Market –** The above warning notwithstanding, students may benefit from creating a shadow investment portfolio and following it throughout the course. This project can be run on paper or with one of the many stock simulation software programs available to instructors. After discussion of the material in later chapters, students can investigate the PE and Market-to-Book ratios of their portfolio companies, calculate individual betas and a portfolio beta, and calculate a weighted average cost of capital for each firm they are following. It may also be interesting, when discussing the efficient market hypothesis, to compare student results to a randomly selected portfolio.

The **second learning objective** of this chapter is an understanding of the basic structure of mutual funds, pension funds, banks, and insurance companies. The financial intermediaries described here include commercial banks, finance companies, life and casualty insurance companies, credit unions, and savings and loan associations. Mutual funds and pension funds are also explained.

The **third learning objective** of this chapter is an explanation of the functions of financial markets and institutions. The five functions covered are transporting cash across

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time, risk transfer and diversification, liquidity, a payment mechanism, and information. The final function, information, is important to discuss as the pricing of securities imparts required rate of return information for new corporate investments (cost of capital) on a continuous basis.

> **Teaching Note: Capital Market Efficiency -** Finance in Action Box *Prediction Markets,* provides an interesting example on how a market works. This example can prepare the students for the later more in-depth discussion of the efficient market hypothesis. The Iowa Electronic Markets is a good market to discuss if you are teaching during an election year.

The **fourth learning objective** of this chapter is an understanding of the main events behind the financial crisis of 2007–2009. The authors describe how a huge expansion in subprime mortgage lending led to a collapse of the banking system which the government was forced to bailout. The importance of the Federal Reserve to financial markets, the role of credit rating agencies, and agency problems at banks are all discussed here.

> **Teaching Note: Ethical Issues –** Section 2.5 includes a discussion of how banks expanded the supply of sub-prime mortgages and tempted many would-be homeowners with teaser introductory interest rates. The authors describe the agency problems surrounding bankers that may been guilty of promoting these financial products.

Student Career Planning - For this financial markets discussion, ask students to evaluate the efficiency of the entry-level job market. Review the conditions necessary for high levels of efficiency, and students quickly see that inefficiency lurks everywhere. As a transition from financial markets, I always ask students to evaluate every market situation that they face, whether it is the entry-level job market or, later, the product market of their business. Information is king, and in the entry-level job market, information access is a long, nurturing process which includes networking, data bases, reading, communications, and recently, even the Internet. There are few short cuts unless they are the boss's daughter or son, and that is valuable information for their fellow students!

Internet Exercises –

The websites below are referred to in the book and are well worth exploring.

http://www.cba.ca/

The website of the Canadian Bankers Association provides a wealth of information on the nation's banking industry. You will find information on Canada's chartered banks as well as other domestic and foreign banks and bank branches operating in the country. The

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website provides useful and updated statistics on the banking industry. Also, you can read about important legislative enactments, historical milestones on Canadian banking, and news features on the industry.

http://www.ific.ca/

This is the site of the Investment Funds Institute of Canada (IFIC) and provides good information on the mutual fund industry. You may want to check out their monthly industry statistics updates. You can also link to individual member mutual fund websites in addition to other sites that would be of interest to finance professionals. The IFIC Education link will take you to relevant information on professional study courses such as the Certified Financial Planner program or the Canadian Investment Funds course. The "regulations and committees" link provides relevant information on the regulatory environment for the mutual funds industry. Try out the "glossary" link as well; it contains an array of terms and related definitions that would be of interest to anyone in the finance profession.

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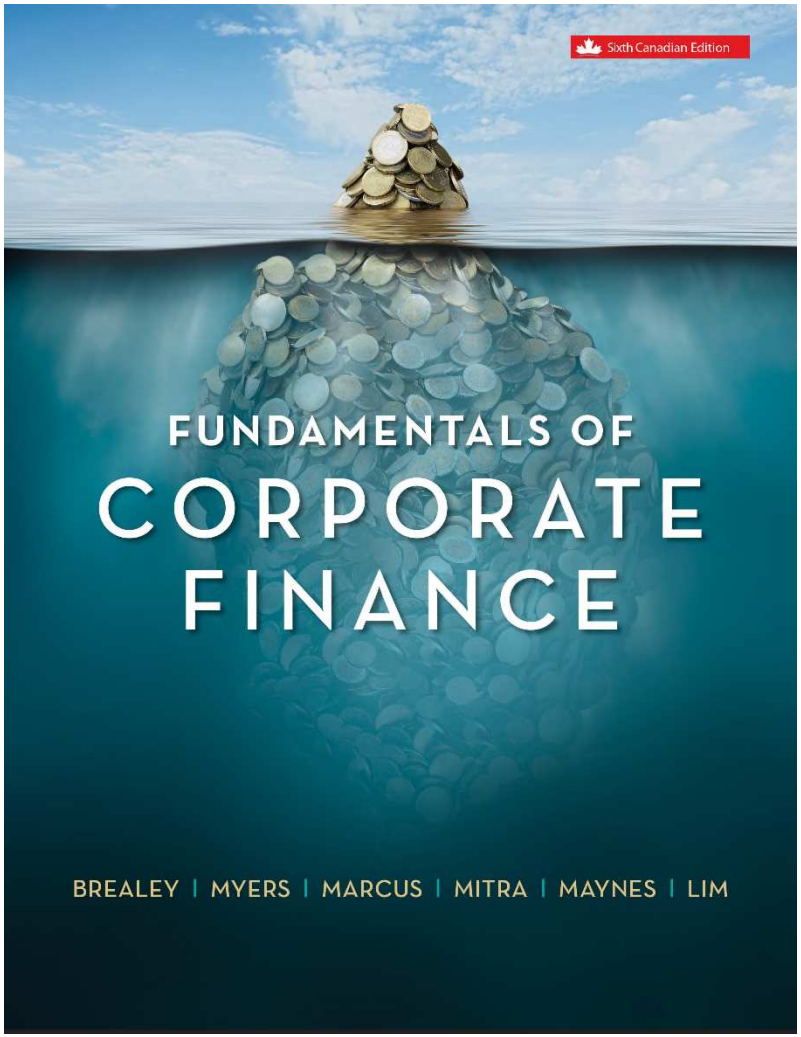
Chapter 2
Financial Markets and Institutions



Prepared by
Tanya Willis
Saint Mary's University

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Learning Objectives

After studying this chapter, you should be able to:

- LO1 Describe how financial markets and institutions channel savings to corporate investment.
- LO2 Describe the basic structure of mutual funds, pension funds, banks, and insurance companies.
- LO3 Enumerate the functions of financial markets and institutions.
- LO4 Explain why the cost of capital for corporate investment is determined by investment opportunities in financial markets.
- LO5 Recount the main events behind the financial crisis of 2007-2009 and the subsequent Eurozone crisis.

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2.1 The Importance of Financial Markets and Institutions

- Financial markets and institutions are critical to the success of business.
- Businesses have to go to financial markets and institutions for the financing they need to grow.
- When they have surplus cash, they have to invest in bank accounts or in securities.
- A modern financial system offers financing in many different forms.

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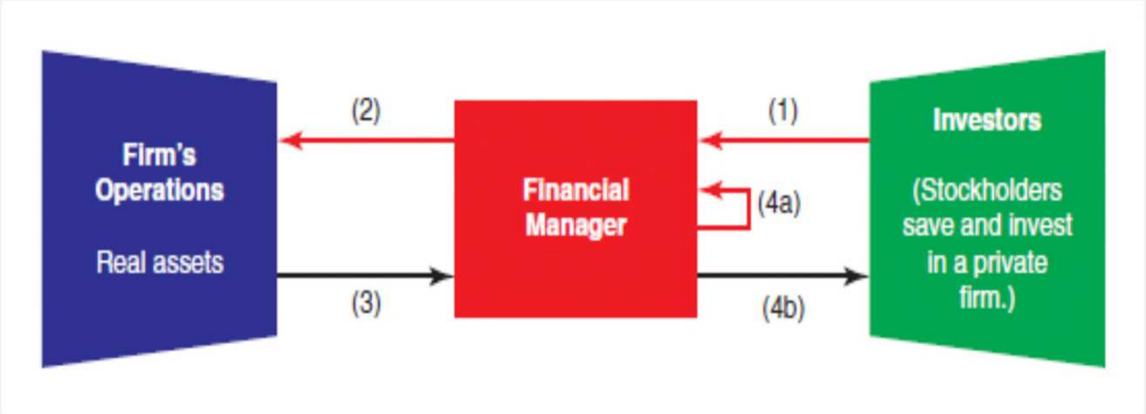
2.2 The Flow of Savings to Corporations

FIGURE 2.1
Flow of savings to corporate investment (red arrows) in a private corporation. Investors purchase shares with personal savings (1), which are invested (2). The business generates cash (3), which is reinvested (4a) or paid out to shareholders (4b). Reinvestment (4a) represents additional savings on behalf of shareholders.



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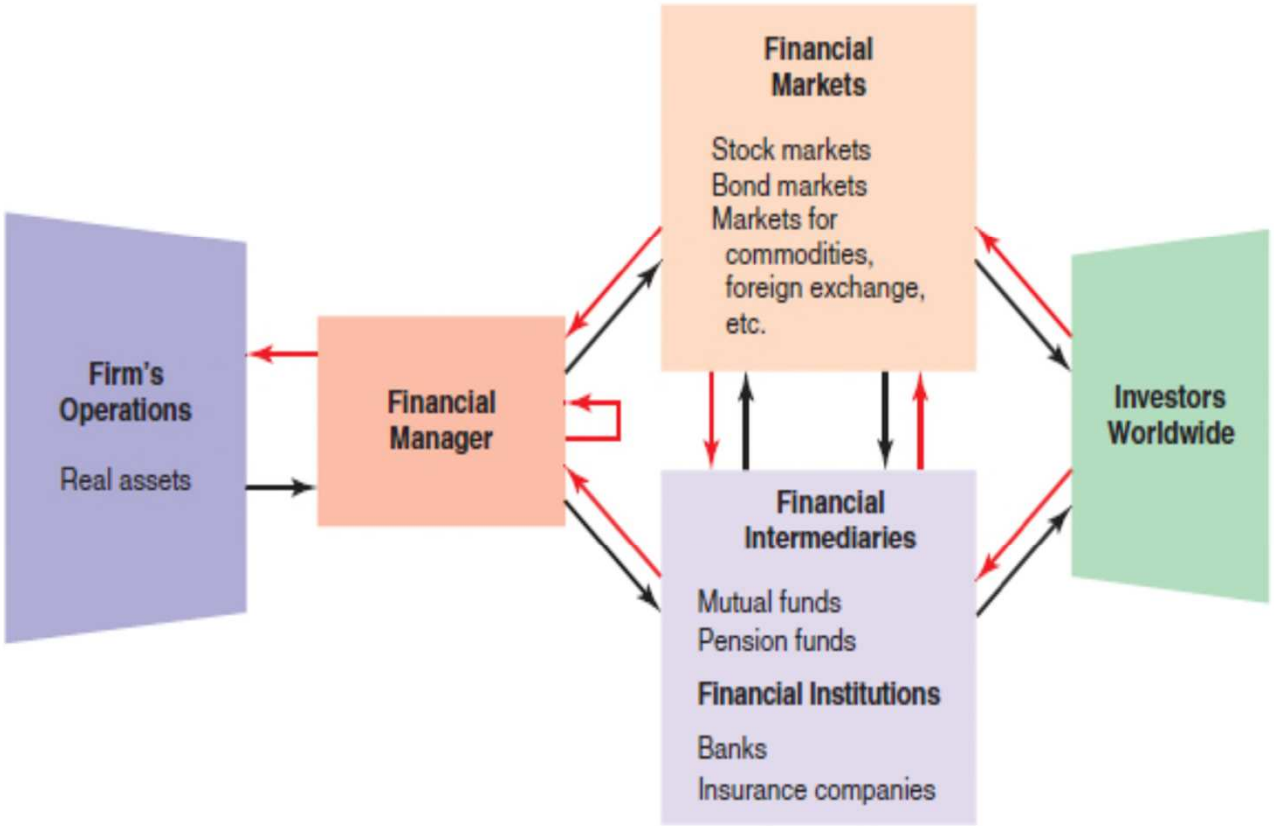
The Flow of Savings to Corporations

FIGURE 2.2
Flow of savings to a large public corporation (red arrows). Savings, which can come from investors worldwide, might flow through financial markets or financial intermediaries. Savings might also flow into financial intermediaries through financial markets or into financial markets through financial intermediaries.



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The Stock Market

Definitions

- Financial Market: A market in which securities are issued and traded.
- Primary Market: A new issue of stocks or bonds is known as a *primary issue*. The market where these are traded is the primary market.
- Secondary Market: The purchase and sale of existing securities is known as a *secondary transaction*. The market where this happens is called the secondary market.

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The Stock Market

- Stock markets are also called equity markets, since shareholders are said to own the common equity of the firm.
- The Toronto Stock Exchange (TSX) is the main stock exchange for trading shares of large Canadian corporations.
- Trading in the shares of smaller emerging Canadian companies is done through the TSX Venture Exchange (TSX-V) and the Canadian National Stock Exchange (CNSX), Canada's new stock exchange for emerging companies.

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Other Financial Markets

- Fixed Income Market: A market where securities promising fixed amount of income, such as bonds, are traded among investors. Also known as Debt Market.

- Capital Market: A market for long term (more than one year) debt and equity securities.

- Money Market: A market where short term (less than one year) securities are traded among investors.

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Other Financial Markets

- Foreign Exchange Markets**:** Any corporation engaged in international trade must be able to transfer money from dollars to other currencies or vice versa.

- Commodities Markets**:** Markets where commodities such as corn, wheat, oil, and natural gas are traded.

- Markets for options and other derivatives: Markets where derivative securities, such as futures and options, are traded among investors.

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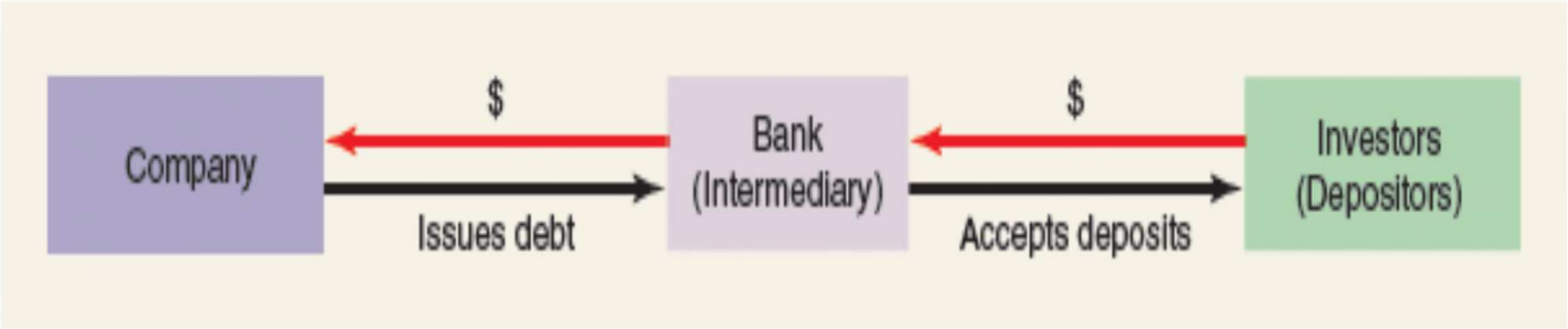
Financial Intermediaries

- Financial intermediary: An organization that raises money from investors and provides financing for individuals, corporations and other organizations.
- The flow of savings between an investor, a bank (Intermediary), and a corporation is as follows:



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Classes of Intermediaries

- Mutual Funds
- Exchange-traded funds (ETFs)
- Hedge Funds
- Private Equity Funds
- Pension Funds

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Financial Institutions

- Banks and insurance companies are examples of financial intermediaries- intermediaries that do more than just pool and invest savings.
- They raise financing by accepting deposits or selling insurance policies and provide additional financial services.
- Unlike a mutual fund, they not only invest in securities but also loan money directly to individuals and businesses.
- 76 banks in Canada manage about $3.4 trillion in assets.
- Trust companies, credit unions and caisses populaires accept deposits and make loans, as well as manage assets for estates or pension plans.
- Insurance companies include health, life, property and casualty insurance companies. They make massive investments in corporate stocks and bonds and occasionally make long term loans directly to corporations.

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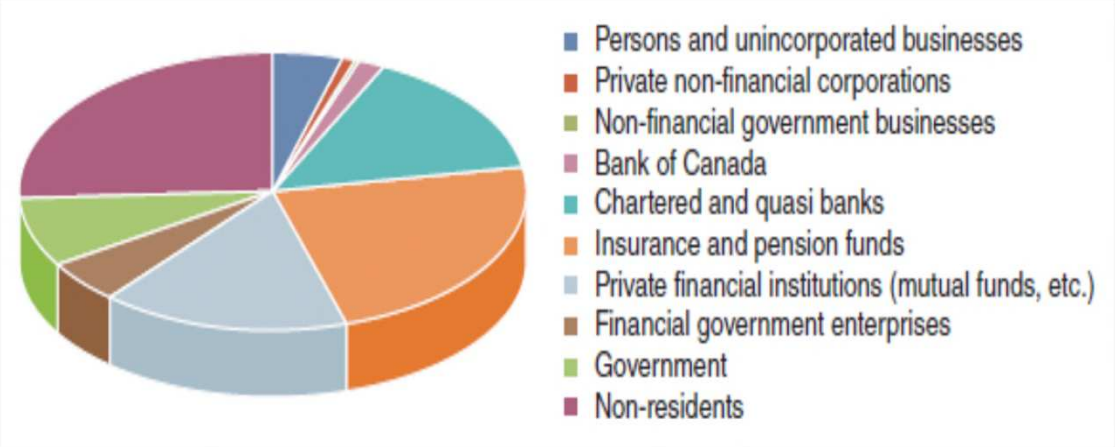
Total Financing of Canadian Corporations - Debt

FIGURE 2.3
Holdings of Canadian bonds and debentures, 2011.



Source: Statistics Canada, "Other Canadian Bonds," Table 378-0051: "National Balance Sheet Accounts, by Sectors, Annual (Dollars × 1,000,000)," **www.statscan.ca**.

Notes:

1. The category "Other Canadian Bonds" comprises mainly bonds and debentures issued by Canadian corporations.
2. *Investment dealers* include investment dealers, issuers of asset-backed securities, and sales finance and consumer loan companies.
3. *Insurance companies* include life, accidental, and property and casualty insurance companies.
4. *Banks* include chartered banks and near-banks, which comprise Quebec saving banks, credit unions and caisses populaires; trust companies; and mortgage loan companies.
5. *Non-financial business enterprises* include non-financial private corporations and non-financial government business enterprises.

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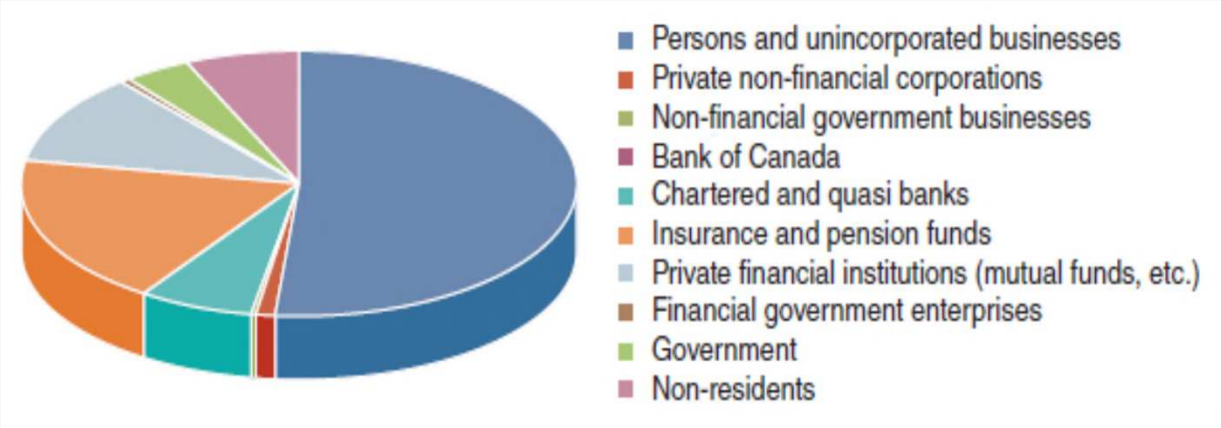
Total Financing of Canadian Corporations - Equity

FIGURE 2.4
Holdings of Canadian equities, 2011.



Source: Statistics Canada, "Shares," Table 378-0051: "National Balance Sheet Accounts, by Sectors, Annual (Dollars × 1,000,000)," **www.statscan.ca**.

Notes:

1. The category "Shares" includes common and preferred shares in addition to some other items such as contributed surplus and mutual fund shares.
2. *Investment dealers* include investment dealers, issuers of asset-backed securities, and sales finance and consumer loan companies.
3. *Insurance companies* include life, accidental, and property and casualty insurance companies.
4. *Banks* include chartered banks and near-banks, which comprise Quebec saving banks, credit unions and caisses populaires; trust companies; and mortgage loan companies.
5. *Non-financial business enterprises* include non-financial private corporations and non-financial government business enterprises.

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2.3 Functions of Financial Markets and Intermediaries

In addition to providing financing for businesses, financial markets and intermediaries also provide many other functions:

- Transporting cash across time
- Risk transfer and diversification
- Provide liquidity
- Provide a payment mechanism
- Provide information on commodity prices, interest rates, and company and stock values

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2.4 Value Maximization and the Cost of Capital

- Well functioning financial markets allow individuals and corporations to share risks and transport savings across time.

- The opportunity cost of capital is the minimum acceptable rate of return on capital investments. Projects offering rates of return higher than the cost of capital add value to the firm.

- The cost of capital for corporate investment is set by the rates of return on investment opportunities in financial markets.

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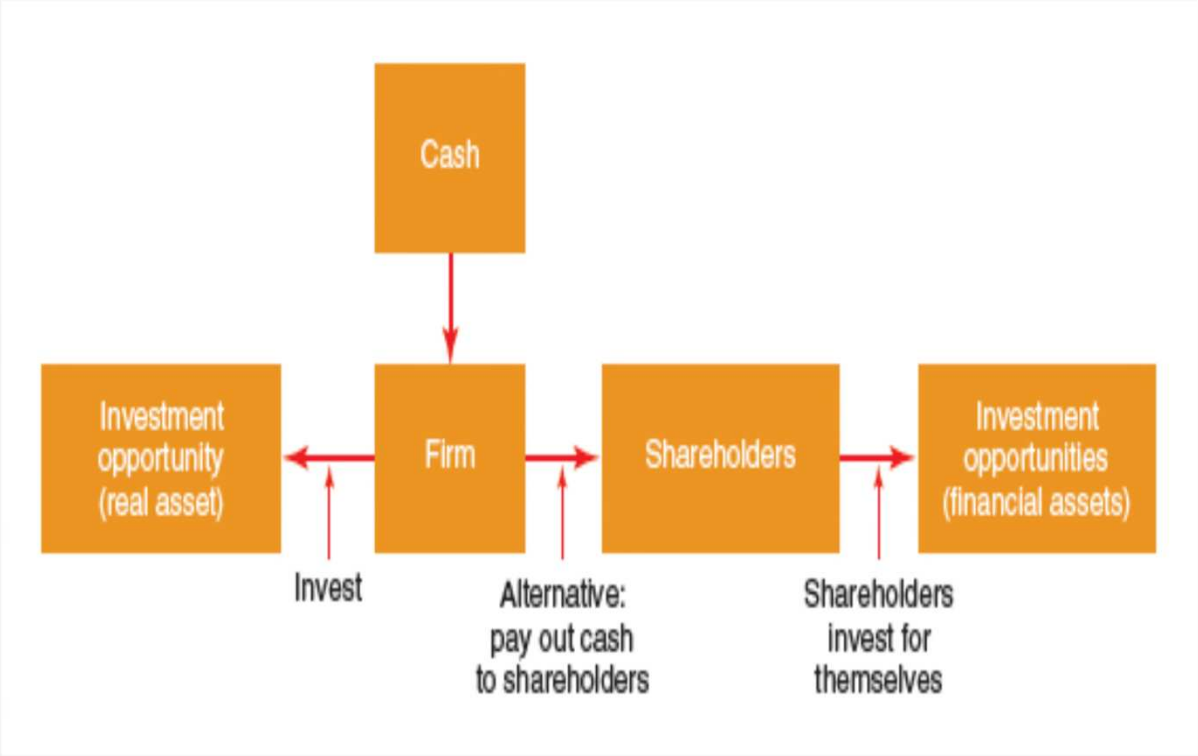
The Opportunity Cost of Capital

FIGURE 2.5

The firm can either keep and reinvest cash or return it to investors. (Arrows represent possible cash flows or transfers.) If cash is reinvested, the opportunity cost is the expected rate of return that shareholders could have obtained by investing in financial assets.



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2.5 The Crisis of 2007 - 2009

- Illustrates the importance of financial markets and institutions.
- Had its roots in the easy-money policies of the U.S.
- Subprime mortgages packaged into mortgage-backed securities.
- U.S. Government had to intervene to rescue institutions.
- In Europe the banking crisis became entwined with a sovereign debt crisis.
- Greece – largest sovereign default in history.
- U.S. Government, U.S. Federal Reserve, rating agencies, bankers promoting products all to blame.

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Summary

- A financial market is one where securities are issued and traded.
- Savings flow through financial markets and intermediaries (mutual funds, exchange-traded funds, pension funds, banks and insurance companies) to provide financing for individuals, corporations or other organizations.
- Mutual funds, exchange-traded funds and pension funds allow investors to diversify in professionally managed portfolios.
- Financial markets provide liquidity and diversification opportunities for investors, as well as information regarding prices, interest rates and values.
- A company's cost of capital is the rate of return an investor could earn in financial markets on an investment of similar risk.
- The existence of financial markets allow individuals and corporations to maximize value.
- Importance of financial markets and institutions emphasized during the Crisis of 2007-2009.

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