

Activity 4.1 – How a Stock Market Works

Bringing Buyers & Sellers Together

A market is defined as a place where buyers and sellers, who are largely unknown to each other, come together for the purpose of exchange. Our economy is a series of such markets, from the corner variety store, to a shopping centre, to a new e-commerce business. This activity will focus on a particular market – the stock market. A stock market is the part of the capital market that brings together buyers and sellers.

Location

Stock markets have always had a physical location known as a trading floor. The media often use images of that trading floor when reporting on developments in the stock market. But technology and the Internet eliminated the need for a physical location of a market. On April 23, 1997, the Toronto Stock Exchange became the largest exchange in North America to choose a floorless, electronic environment when its trading floor closed. All trading takes place on linked computers. The New York Stock Exchange, by contrast, still maintains a trading floor.

What Is Being Exchanged?

Business requires financing to buy assets that are needed for its operation. When world trade opened up in the 1600s, companies or joint partnerships were created to raise large sums of money to finance the building of ships and new trading ventures. Few individuals had enough money to finance the building of a ship, or were willing to assume the entire risk, so ownership was divided into shares (stocks). A specific number of shares were sold at a fixed price to raise the amount of money needed to build a ship. Any profits earned by the ship were distributed in dividends back to the shareholder.

The first sale of shares by a company to the public is called a *Primary Distribution* or an *Initial Public Offering* (IPO).

*One of the funny things about the stock market is that every time
one man buys, another sells, and both think they are astute.*

– William Feather



Traders work at their own location and not at the TSX.

Activity 4.2 – Initial Public Offering (IPO)

Primary Distribution IPO

Suppose a company wishes to raise \$900 in cash. In an IPO, the company offers nine shares for sale at \$100 per share. The company has sold 9 shares @ \$100 per share, so it has raised \$900 in cash. This is called its *market capitalization*. After this capitalization, the company's balance sheet looks like this:

Capitalization

Assets	=	Liabilities	+	Owner's Equity
\$900		\$0		\$900 (9 shares issued)
		↑		↑
		Debt		Equity

This type of transaction between a shareholder and the company occurs only once and takes place in the *primary* market. There are no further exchanges of stock and cash between the company and the shareholder, unless the company decides to issue more shares at a later date.

		
1 share	2 shares	6 shares

The woman above has purchased 6 of the 9 shares. Because she owns more than half of the shares, she is a majority shareholder.

Activity 4.3 – The Secondary Market

If shareholders wish to sell their shares and the company is listed on an exchange, they go to the stock market to find a new buyer for their shares. The buyer may pay more or less than the purchase price (\$100 per share in the above example) depending on supply and demand. This buying and selling of shares takes place in the *Secondary Market*. Almost all activity in a stock market is in the Secondary Market. Trading in the secondary market does not affect the original company or the owners' equity.

Price is an agreed-upon value for the transaction. The *bid* is the highest price a buyer is willing to pay for a stock. In economics this is called *demand*. The *ask* is the lowest price a seller is willing to accept for his or her stock. In economics this is called *supply*. A stock price, therefore, is a manifestation of the law of supply and demand. When the demand for a stock exceeds the number of shares available at a particular price, the price of the stock increases. Conversely, when there is no demand for a stock at a particular price, the price falls. Buyers and sellers have different expectations about the value of a stock. An exchange occurs when buyers and sellers agree on a price. This is called a *trade*.

As illustrated in these charts, the only individuals who could agree on a trade would be C and E. A and B's bid prices are too low and F and G's ask prices are too high. The market would therefore match C and E and an exchange would occur at \$102. Bid and ask prices change from minute to minute as people react to news about the company, the industry, or the economy. Because stock values can change so quickly, investment in stocks involves an element of risk.



BID		ASK		
BUYER	PRICE	SELLER	PRICE	
A	\$99	E	\$102	→ = Trade
B	\$100	F	\$103	
C	\$102	G	\$104	

Activity 4.4 – The Trading Process

Process

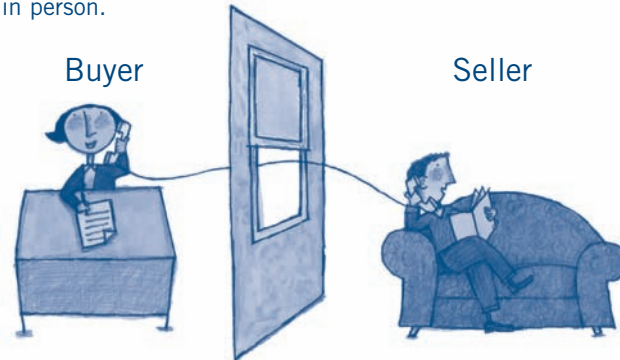
The stock exchange manages the trading process. It determines who may trade and which company's shares may trade. To help in compliance with trading and settlement rules, intermediaries or brokers are given access to the stock exchange so that they can represent buyers and sellers and execute the trades. The exchange also has rules about which firms may trade. Only brokers who work for qualified firms, called *Participating Organizations*, may access the exchange.

Every trade is monitored by trained Market Regulation Services staff to ensure the market is fair for all investors.

The trade is recorded seconds after the broker's orders are transmitted.

Step 1

Order is placed with a broker at a TSX participating organization by phone, Internet, or in person.



Step 2

Orders are matched electronically by the Exchange computer system.



Step 3

When a match is found, the broker informs the client of the trade price plus the commission.

Buyer's Broker

Seller's Broker



BID	←————→	ASK
\$102		\$102
\$100		\$103
\$99		\$104

Activity 4.5 – Making the Trade

Once you have opened an account with a brokerage firm, you are able to place your order. Investors who are fairly knowledgeable and comfortable with making their own decisions on the stock market may choose discount brokers. A discount broker charges less commission (usually a flat rate) but does not offer investment advice. The full-service broker charges more commission, but provides investment advice, analyst reports, and research on companies. Commission varies depending on the broker and value of the trade, but is normally charged as a percentage of the trade.

Placing an Order

When you are ready to place an order, i.e., to purchase shares, the broker will ask a variety of questions such as:

What stock do you want to purchase?

How many shares?

What price are you willing to pay?

What type of order do you want to place?

- A *day order* expires at the end of the day.
- An *at-the-market order* specifies the number of shares to be bought or sold at the best price then available.
- A *limit order* specifies a maximum price for buying or a minimum price for selling.

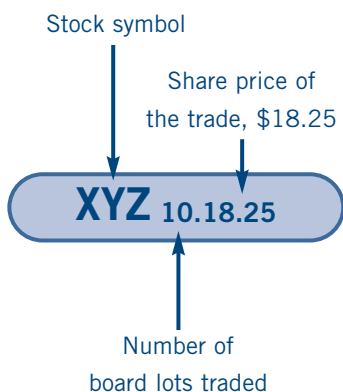
The Settlement Process

Once you have purchased shares of a stock, your broker will tell you how much you must pay for those shares, including the commission the firm charges for its service. You (the buyer) usually have three business days to make the payment. (Money markets generally allow only one day.) How is this done? The buyer ensures that his or her account has sufficient funds to cover the transaction. The buyer's broker then forwards payment (less commission) to the brokerage firm of the seller, who forwards payment (less commission) to the seller. When payment is made, ownership of the stock is transferred from the seller to you, the buyer. The actual transfer of securities takes place through a central clearinghouse. In Canada, the *Canadian Depository for Securities* (CDS) performs the clearing and settlement function. Before computer-based trading, a share certificate was issued to the buyer, but now stocks are electronically added or deleted from a shareholder's account.

Role of the Transfer Agent

The company whose stock you purchased appoints a trust company (transfer agent) to keep track of its shareholders – who they are and where they live. This is important for sending out dividend payments and informing eligible shareholders of annual meetings and their right to vote.





Activity 4.6 – How to Read Trading Information

A ticker tape is a record of current trading that occurs on a stock exchange. Once printed on paper, trades are now displayed on an electronic board. The information displayed includes the stock symbol, the number of shares traded, and the price for each share. Market information is also available (usually with a 15-minute delay) on most cable TV channels and web sites. The following worked examples show how to read trading information presented in various formats.

Worked Example 1

A trade is shown on the ticker as follows: XYZ_{10.18.25}

- What stock was traded?
- How many shares were traded?
- What was the price per share?
- What was the total value of the trade?

Solution

- XYZ is the symbol associated with a particular company.
- The first number following the symbol denotes the number of shares that are traded. Shares over \$1.00 in value trade in board lots of 100. The “10” following the symbol XYZ indicates that 10 board lots of 100, i.e., 1 000 shares were traded. (If the share price were less than \$1.00, the board lots might be 500 or 1 000 shares) When the actual number of shares is given, the letter “s” is used to indicate this, e.g., 1 000s denotes 1 000 shares.
- The numbers following the number of shares traded is the price per share. The “18.25” that follows the “10” indicates that the price was \$18.25 per share for the 1 000 shares. (Note that share prices of stocks on the TSX that are less than \$0.50 trade in increments of half pennies, those \$0.50 and up trade in increments of pennies.)
- The value of the 1 000 shares traded was 1 000 X \$18.25 or \$18 250.

Market by Order (MBO) Display

Company whose
shares are
being traded

XYZ					
007	700	10.75	11.05	4 500	077
003	6 000	10.70	11.40	7 700	099
007	4 500	10.55	11.40	4 700	077
007	5 000	10.50	11.50	1 200	003
007	6 500	10.35	11.55	400	099
Firm	Volume	Price	Price	Volume	Firm
Bidding Firm	Number of Shares	Bid Price per Share	Ask Price per Share	Number of Shares	Asking Firm

A more convenient display for brokers is the *Market-by-Order Display* located on their trading terminal. The MBO screen lists the best buy and sell orders for a particular stock. The diagram shows the five best (highest) bids and the five best (lowest) asks for company with stock symbol XYZ. This display is useful for both brokers and traders who are interested in knowing exactly how much of a specific stock is available and at what price. The best bid and ask prices shown in the MBO display may be shown on the ticker: `XYZ 10.75 B 11.05` indicating that the highest bid on XYZ stock is \$10.75 and the lowest ask is \$11.05.

Worked Example 2

Stocks are listed every day in the newspaper but many people find it hard to read a stock page. In the following worked example, we look at the trading activity for the Bank of Calgary stock.

A newspaper displays the following trading information for May 26, 2000 on the Bank of Calgary.

1	2	3	4	5	6	7	8	9	10	11	12	13
Year High	Year Low	Stock	Sym	High	Low	Close	Chg	Vol	Div	Yield	EPS	P/E
60.60	42.00	B of C	BC	59.95	58.60	59.80	+.40	9560	2.00	3.34	5.69	10.5

Explain the meaning of the number or symbol in each column as you move from left to right.



All stocks presented in the worked example and exercises that follow are fictitious and are used for instructional purposes only.

Solution

Columns 1 and 2 Year High, Year Low

These are running numbers that show the highest (\$60.60) and lowest (\$42.00) price that the Bank of Calgary has traded at in the last 52 weeks. This gives an indication of the price ranges at which the stock has traded.

Column 3 and 4 Stock, Symbol

These columns give, respectively, the name of the stock and its symbol. Sometimes it is an abbreviation and you might have to look further to find the name. The stock symbol is uniform for Canadian markets and is used on tickers and other sources of market information.

Columns 5, 6, and 7 High, Low, Close

On this day the Bank of Calgary traded as high as \$59.95 and as low as \$58.60. The last trade of the day took place at \$59.80 and is called the *closing price*.

Column 8 and 9 Change, Volume

Change is the difference between the close today May 26 and yesterday's close on May 25.

+40 means an increase of \$0.40. (-40 would mean a decrease of \$0.40.)

Yesterday's close was \$59.80 - \$0.40 = \$59.40. The number of shares traded (volume) is expressed in 100's. This means that 956 000 shares of the Bank of Calgary were traded.

Column 10 Dividend

A dividend is the amount of profits that a Board of Directors has declared be paid per year on each share. Not all companies pay dividends. If a company pays a dividend it will be reported in this column. If it is blank then no dividend has been paid. The Bank of Calgary is paying each shareholder \$2.00 per share.

Column 11 Yield

The yield is the dividend divided by the closing price of the stock

$\$2.00/\$59.80 = 3.34\%$. This is the measure of the return on an investment and is shown as a percentage.

Column 12 Earnings Per Share (EPS)

This is net profit divided by the number of shares. The Bank of Calgary earned \$5.69 per share. Note shareholders receive \$2 (the dividend) and the company retains \$3.69.

Column 13 Price Earnings Ratio (P/E)

It is obtained by dividing the closing price of the stock by the earnings per share ($59.80 / 5.69$). This ratio measures the relationship between the earnings of the company and stock prices. The Bank of Calgary is selling at \$10.50 per \$1 of earnings per share. A P/E ratio of 170 would mean a stock is selling at \$170 per \$1 of earnings.

Activity 4.7 – Exploratory Activity A

Using Stock Indexes to Read Market Trends

What Is a Market Index?

When newscasters say, “the Index closed up 20 points today at 8 702,” what do they mean? Although the numbers in an index report sound complex, the idea behind the index is very simple. An index is a way of measuring how a market is doing and where it is going. For example, the *S&P/TSX Composite Index* includes companies that have broad economic sector coverage. So if you hear the index went up on a particular day, you know that most of those stocks rose in price that day, or a few heavily weighted stocks rose significantly.

Why Watch the Index?

Indexes are useful in many ways. You can look at how an index did over the past year in order to determine historical patterns. A long period in which the index increases is called a *bull market*, while a falling index indicates a *bear market*.

An index can help you see how well a stock is doing compared to other similar stocks. For example, if XYZ Inc. on the TSX dropped by \$20 during a period when the S&P/TSX Composite moved higher, it may be worth investigating the reason for the stock price movements. Variations of prices are statistically measured over a period of time, commonly referred to as *volatility*.

Other TSX Indexes

The *S&P/TSX 60 Index* was launched on December 31, 1998. It is a large capitalization index for Canadian equity markets. S&P/TSX 60 constituents are selected for inclusion using Standard & Poor’s guidelines for evaluating company capitalization, liquidity and fundamentals. Companies themselves play no role in the selection process and are not consulted regarding their inclusion in the index.

Index Based Products

Indexes have become so important that there are now investment products based on them; for example, i60 units (symbol XIU). i60 units allow you to buy a piece of 60 stocks in the S&P/TSX 60 in one trade. This helps investors diversify their stock portfolio easily and inexpensively. Because they are based on an index, i60 units allow you to participate in the performance of the various segments of the Toronto Stock Exchange.



BULL MARKETS

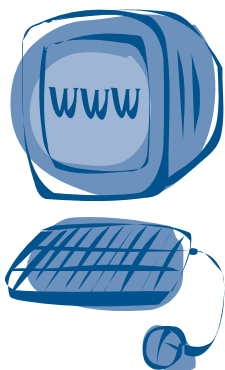
are associated with rising stock prices and higher stock indexes.

BEAR MARKETS

are associated with falling stock prices and lower stock indexes.

¹ S&P is a trademark of The McGraw Hill Companies, Inc.

² i60 units are created by Barclays Global Investors Canada Limited.



Internet Exploration

- Access the TSX home page at www.tsx.com
- Select *site map* from the menu along the top of the home page.
- Then select *closing summary*.
- Locate the tables showing the most active stocks, the top advances and declines and the biggest % gainers and losers. Does the data match what you found in the newspaper? Explain why or why not.

Index	Close	Net Chg	% Chg	52wk high	52wk low	Volume
S&P/TSX Composite	8 473.51	- 491.90	- 5.49	10 176.60	6 717.51	205 000 000

- 1 Turn to the financial section of yesterday's issue of a local newspaper. Look for the TSX listings to see the list of stocks and the quotes. Find the following information:
 - the S&P/TSX Composite at the close of the previous day.
 - the change in the index over the day before yesterday.
 - the % change in the index.
 - the high and low values of the S&P/TSX Composite over the past 52 weeks.
 - the spread in the S&P/TSX Composite in the past 52 weeks.
- 2 Use the information you recorded in *Exercise 1* to determine whether the S&P/TSX Composite is now closer to its high point or low point for the past year. Do you think the S&P/TSX Composite will rise over the next few months? Give reasons for your answer.
- 3 Look for a table in your newspaper that lists the most active stocks. What do you think is meant by *most active*? Write the name of the most active stock on the TSX yesterday. How many shares of that stock were traded? Do you know why that stock was so heavily traded? If so, explain.
- 4 Since the price of a stock can fluctuate, changes in the value of the investment are called *capital gains* or *capital losses*, depending on whether the value has increased or decreased. Look for a table in your newspaper listing the biggest % gainers and losers on the TSX. Record the name of the company that was the biggest % gainer. If you owned \$100 000 of that stock at the market opening yesterday, what would be the value of your \$100 000 investment at the end of the day? How much of a capital gain would you have made?
- 5 Look for a table in your newspaper that lists the biggest net gainers and losers on the TSX. Record the name of the company that was the biggest net loser. If you owned 10 000 shares of that stock at the market opening yesterday, how much of a capital loss would you have sustained on that stock by the end of the day?

Activity 4.8 – Exploratory Activity B

Using Data to Analyse a Particular Stock

There are two factors to be determined in the calculation of the potential yield of an investment. The first is the amount of any payment that comes from owning the investment. This would include interest payments, dividends, royalties, and profit-sharing arrangements. The second is whether or not the value of the principal has changed. The original amount you put into an investment is called the *principal*. If the amount of the principal is guaranteed and will not decrease or increase, you have a safe investment. A bank account is an example of a safe investment, as the amount of the principal will neither increase nor decrease over time. If the amount of the principal can increase or decrease then that investment has greater risk. The following worked example shows how we calculate the yield on a stock.



Worked Example 3

On May 1, 2000, Sarah paid \$10 per share for a board lot of Bank of Calgary. She used a discount broker who charged her a \$25 commission. She held the stocks until November 30, 2000 when she sold all her shares for \$11.20 per share. This time she used a full service broker who charged her \$83.43 for her trade. She received one dividend payment of \$0.58 per share in July. How much money did she make on the stock? What was her percentage return on her investment?

Solution

Sarah Paid on May 1:

100 shares @ \$10/share	=	\$ 1 000.00
Commission on purchase	=	\$ 25.00
<hr/>		
Total Paid	=	\$ 1 025.00

Sarah Received on Nov 30:

100 shares @ \$11.20/share	=	\$ 1 120.00
Dividend on 100 shares @ \$0.58	=	\$ 58.00
<hr/>		
Total received		\$ 1 178.00
Less commission on the sale	-	\$ 83.43
<hr/>		
Net received		\$ 1 094.57

Amount Sarah made:

Net received	=	\$ 1 094.57
Minus amount paid	-	\$ 1 025.00
<hr/>		
Total made	=	\$ 69.57

Sarah's yield as a percent of her investment is

$\$69.57 / \$1\,025.00 \times 100\% = 6.78\%$.

That is, Sarah made a 6.78% return in a period of 7 months from May 1 to November 30. On an annual basis, this is equivalent to $6.78\% \times 12/7$ or about 11.6% per annum.



Pre-Internet Activity

1 Choose a Company to Investigate.

Use the stock page in a newspaper to identify at least two or three companies to investigate that are listed on the TSX. Investigate one company only; the others are alternatives in case there is not enough information for the original choice. Remember to look in the most active or greatest change sections to identify currently popular stocks. You can leaf through the financial section of your newspaper to find stories on companies you might investigate. Your parent(s) or another adult may have information and can recommend a company.

2 Preliminary Research

Record all the information you can find about the stock, including its name and symbol. Include highs, lows, and volume. Indicate from your research whether you think this company is a good investment and support your opinion with information gleaned from your research.

Internet Activity

3 Go to the web site www.tsx.com

4 Go to the box beside *Get Quote* and type in the stock symbol. Click *Get Quote* to continue. Notice that if you have forgotten the symbol, there is a link to help you search for the symbol.

Under *Detailed View* investigate 4 links and make notes as you investigate.

a) Company Information

Use this link to find out three or four facts about the company and its products. Get a sense of what this company is all about. Note, you might have to go back through the screens. Look at the annual reports for important information about the company's future plans.

b) Company Snapshot

Use this link to find three or four key financial facts about this company, such as sales (revenue), profits, and total assets. Remember to record the name of the industry for this company and the names of its top competitors.

c) Price History

Look at the price and try to describe the trend. Is the trend of price and volume upward, downward, stable or volatile? What evidence supports this?

d) Charts

The charts cover the same material as the price history but contain a variety of time periods. Look at them and try to identify any trends you see about price and volume of this stock. Offer some support for your conclusion.

e) Other Sources

Use a search engine to find other information about this company. Write down the URL to use as the reference for what you found.



Post-Internet Activity

5 Comparison Report

Brainstorm in class and find some of the areas of information that most people found, e.g., stock price, high and low, revenue, industry, number of employees, head office location.

With a partner, prepare a *similarities and differences report* about the companies you found, based on some of the criteria developed in class.



Activity 4.9 – Worksheet

Pre-Internet Activity

- 1 The company I've chosen to investigate is _____
- 2 Information about the company (highs, lows, symbol, volume). Is this company a good investment? Why?

Internet Activity

- 1 **Web site**
List facts about the company and its products.

- 2 **Financial Snapshot**
List the company's sales, profits/losses, total assets.

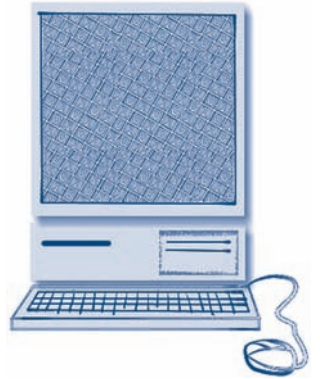
Industry _____

Competitors _____

- 3 **Price History**
Describe the trend; include evidence.

4 Charts

What trends have you identified? Offer support for your conclusion.



Post-Internet Activity

5 Other Sources (URLs)

Partner _____

Partner's company _____

Compare and contrast your companies



Activity 4.10 – Exercises

Below is stock market information on 5 stocks and a brief description of each company.

Active Cell is a software company producing Internet interface products for small businesses that want to start an e-commerce branch. It has been in business since 1998.

Lava Auto is an auto parts company manufacturing low pollution devices for North American cars.

Can Wear is a retail store specializing in Canadian and Native products. It is beginning to open new stores in Europe where the interest in native products is high.

Nickel Mine is an integrated mining operation in northern Ontario producing primarily nickel and zinc.

Bank of Calgary is a diversified financial institution comprising two units: the personal and commercial bank, which provides financial services for small businesses and farms; and Calgary Oil Funds, which serves investors.

The financial page of the newspaper gives the following market information on May 1.

52Wk 52Wk

High	Low	Stock	Symbol	High	Low	Close	Chg	Vol 100s	Div	Yield	EPS	P/E
125	22.5	Active Cell	ACT	123.45	120.50	122.8	1.50	4 500			-\$0.20	
67.2	54.5	B of C	BC	59.10	58.75	59.0	0.20	1 500	\$2.25	3.81	\$4.69	12.6
42.3	12.5	Can Wear	CW	14.5	14.25	14.4	-0.10	26 000	\$0.02	0.14	\$0.10	151.6
87.5	45.6	Lava Auto	LAC	74.5	73.65	74.1	0.20	6 500	\$1.80	2.43	\$2.20	33.7
48.4	43.5	Nickel Mine	NMW.PR	47.5	47.25	47.3	0.15	3 600	\$3.20	6.77		

52Wk 52Wk

High	Low	Index	High	Low	Close	Chg	Vol
4 032.70	3 703.60	Mining	3 422.05	3 410.50	3 421.05	+39.17	1 166 374
2 779.67	1 240.00	Tech Software	2 748.67	2 743.29	2 747.56	+22.10	1 688 988
9 632.80	8 455.00	Banks & Trusts	8 558.00	8 553.45	8 557.38	+12.14	2 185 596
1 336.09	803.00	Household Goods	996.85	991.78	994.50	-9.78	27 008
14 256.09	12 383.00	Auto Parts	13 296.85	13 191.78	12 294.50	+2.78	1 56 983

Most Active Issues

Stocks	Sym	Volume	Close	Chg
NS Tell	NTE	292 777	23.05	+0.40
Can Wear	CW	290 648	14.40	-0.10
KitchenIn	KTL	281 531	78.50	+0.10

Biggest % Gainers

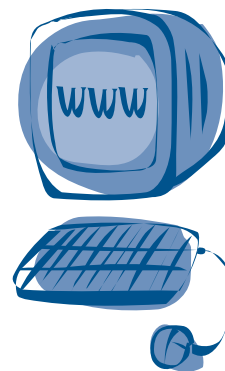
Gainers	Sym	Volume	Close	Chg
Active	ACT	31 150	122.80	+23
Regal	TML	851 283	7.00	+21
Catso	COB	4 000	0.12	+20

Biggest % Losers

Losers	Sym	Volume	Close	Chg
CTS Inc	CTS	30 000	0.23	-35
Evergreen	ECG.A	27 150	1.80	-26
Batch	CoBTC	45 000	0.25	-25

- 1 In addition to the information in the newspaper, there is a partial ticker.
 CW 14.20B14.60 NMW.PR 5.47.45 BC 3.59.10 BC 4.58.95 CW 14.30B14.60
 Based on all the information given, answer the following questions:
- What stock has the symbol CW? _____
 - What is the closing price for Lava Auto? _____
 - If you bought 100 shares of Nickel Mine at the closing price how much money would you spend? _____
 - What profits would you have made if you bought 100 shares of Active Cell at its lowest price for the whole year and sold it at its close today? _____
 - What price did the Bank of Calgary close at yesterday? _____
 - What number of shares of Lava Auto was sold? _____
 - If Can Wear's trades were all trades involving one board lot, how many trades were there? _____
 - What stock has the highest dividend yield? _____
 - What is the lowest P/E ratio? _____
 - What was the most active stock on the exchange? _____
 - What stock decreased the most in price on the exchange? _____
 - Which index was the most active? _____
 - Did the change on the ticker for Can Wear indicate more or less demand? _____
 - What is significant about one of the trades for the Bank of Calgary? _____

- 2 You have \$60 000. You can buy any combination of the five stocks on the stock page. Commissions are set at \$29 a trade. You must buy at least one board lot. You can choose to keep any cash in a treasury bill, which has an interest rate of 3.5% annually. Submit to your teacher a well-organized summary of what you have done showing all costs and how you used the \$60 000.



Internet Exploration

Your teacher will provide you with the closing prices and the dividends for all five of the stocks as of December 31. When you have this information, calculate how much you have earned on paper for your portfolio. Show all work.

How Do You Calculate Broker Commissions?

Visit the web site below to discover how to calculate the commissions a broker charges on a stock transaction.

www.tdwaterhouse.ca/services/fcschedule.jsp



*Hope for the best,
prepare for the worst.*

– Marty Zweig

(His newsletter advised investors to sell stocks – just before Black Monday.)

Activity 5.1 – The Risks & Safeguards in Stock Trading

On October 19, 1987 (referred to as *Black Monday*), the New York stock market plunged 22.6%. This means that investments in equities on that market fell on average by almost one-quarter of their value. (On the TSX the drop was just under 12%.) Imagine losing several years' worth of income in a single day! Many people panicked, fearing that the market would continue to tumble and that they would lose almost all of their savings. Others saw this as a market correction and an opportunity to buy stocks at bargain prices.

The newsclip below describes a more recent single-day decline in stock values on October 27, 1997, when stocks on the TSX fell by about 6%. The markets saw another correction on April 14, 2000 when stocks on the technology-based Nasdaq market sustained one of the greatest single day losses in its history.

With such risks, why would anyone invest money in equities? Between these dramatic downturns in the market, there were sustained periods of steady and sometimes explosive growth in stock values. Most investors who bought stocks during the past decade have enjoyed annual growth rates that significantly exceed the rates of return on cash or fixed income securities. In fact the S&P/TSX Composite Index was under 3 000 in 1985, approached 5 000 in 1995 and passed the 10 000 mark five years later in the year 2000. That's a doubling of value in five years! Check the newspaper or www.tsx.com for the latest index levels.

The investor must be aware of the potential risks in equity investment. Two of the many factors causing fluctuations in equity markets are the fear of *inflation* and its opposite, *deflation*.



Activity 5.2 – Economic Factors That Affect Stock Prices

Inflation

A period of *inflation* is a time when costs are rising faster than productivity. The rising prices decrease the purchasing power of a dollar, meaning that a dollar does not buy as much as it did before. To prevent inflation from growing too quickly, the Bank of Canada raises the rate of interest that it charges banks for the money it lends them. Commercial banks raise interest rates on their loans to compensate for the greater interest that they must pay the Bank of Canada. Since many companies carry large loans to finance their operations, the higher interest reduces their profitability and hence their desirability as investments. Usually the demand for these stocks decreases and the stock market falls. This prompts many investors to sell their stocks and buy treasury bills or bonds to take advantage of the higher rates of return and protect against the risk of losses in the stock market. Decisions by the Bank of Canada to stabilize or stimulate the Canadian economy by raising or lowering interest rates is known as *monetary policy*.

In 1923, inflation in Germany turned into hyperinflation and prices rose so quickly that restaurant patrons would ask for the bill before receiving their meal because the price was rising while they ate! As a result the German currency (called the “mark”) became virtually worthless. The United States and Canada have never suffered hyperinflation, but did sustain significant inflation in the 1970s and 1980s.

Deflation

As noted above, the Bank of Canada may raise interest rates to slow down the rate of inflation. A substantial increase in interest rates by the Bank of Canada is referred to as a *tight monetary policy*. If a tight monetary policy is in effect for a prolonged period, it could induce a period of *deflation*. Deflation is the economic opposite of inflation. It is a time when the cost of goods and services is decreasing, that is, the purchasing power of a dollar is increasing. The high interest rates discourage borrowing and reduce the demand for credit to expand business. Furthermore, people anticipating further decreases in prices postpone purchases and economic activity begins to slow. (Economists call this the *Mundell effect*.)

One of the worst periods of deflation occurred in the period from 1929 to 1939, called the *Great Depression*. The causes of the Great Depression are complex. However, there is some consensus among economists that tight monetary policy was a principal factor. The ensuing drop in investment was signalled by the crash of the New York stock market in the fall of 1929.



The Market Is Bearish When...

- there is general pessimism about the health of the economy.
- the prices of stocks are falling.



The Market Is Bullish When...

- there is general optimism about the health of the economy.
- the prices of stocks are rising.



Diversification

One way to reduce investment risk is to invest in a variety of stocks that may span several market sectors, such as utilities, natural resources, technology, or financial services. In this way, any capital losses sustained by stocks in one sector may be partially or fully offset by capital gains of stocks in another sector. Such hedging of investments is called *diversification*. One investment vehicle that facilitates diversification is the *mutual fund*. A mutual fund is a collection of investments such as stocks, bonds, or *cash equivalents* (investment that easily can be changed into cash) that can be purchased as a single entity. Some mutual funds provide diversification across sectors, while others provide diversification across international markets.

Activity 5.3 – Using Data & Statistics to Assess Economic Trends: Measuring Inflation

Analysts and investors use economic data and statistics to anticipate the risks of inflation, deflation, and interest rate changes that may cause fluctuations in the market and the values of various types of investments. These data, called *economic indicators*, are issued by Statistics Canada on a regular basis and are available at their web site at: www.statcan.ca. Among the most widely used economic indicators are the *consumer price index* (CPI), the *gross domestic product* (GDP), the *unemployment rate*, the *prime rate*, the *currency exchange rates*, and *housing starts*.

Consumer Price Index (CPI)

The consumer price index is used to measure inflation in the prices of goods and services to Canadians. It is obtained by comparing the cost of a *fixed basket* of goods and services purchased by Canadians in that year compared to the cost of the same items in 1992. (Observe that 1992 is currently used as the comparison year by Statistics Canada, but this is subject to change.) The CPI is a measure of price change and is useful in detecting levels of inflation and its reciprocal, the purchasing power of a Canadian dollar.

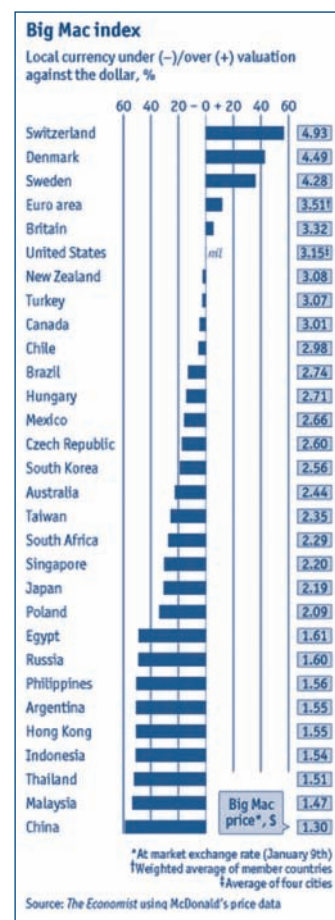
The table shows the CPI in Canada every five years from 1970 to 2005 relative to 1992. The entry 24.2 opposite 1970 in the table indicates that on average the purchasing power of a Canadian dollar in 1992 was only 24.2% of its purchasing power in 1970. Alternatively, we can say that prices of goods and services to Canadian consumers in 1970 were only 24.2% of the prices in 1992 for a comparable basket of goods and services. The example that follows shows how we can use the CPI to compare monetary amounts from different years in terms of their *real values*.

Purchasing power can also be used to compare the currencies of different countries. *The Economist* magazine created the *Big Mac Index*¹. This index compares the price of a *Big Mac*™ in the United States with its cost in another country. Assuming the cost in both countries represents the same value enables us to calculate what the currency conversion “should be.” For example, a Big Mac in the United States costs about \$US 3.15. The graph shows that in China it costs about \$US 1.30 when the actual exchange rate used is \$US 1.00 = 8.07 yuan (Chinese currency). However, if we assume that the Big Mac has the same value in both countries, then the value of the burger in China should be \$US 3.15, not \$US 1.30. That is, the Chinese currency is *undervalued* by about 59%. Research the cost of a Big Mac in your area and assume it's close to the average Big Mac cost in Canada. Then calculate the Big Mac Index for Canada and compare this with the current exchange rate. Does the Big Mac Index suggest that the Canadian dollar is overvalued or undervalued?

Measuring Inflation

Year	CPI
1970	24.2
1975	34.5
1980	52.4
1985	75.0
1990	93.3
1995	104.2
2000	113.5
2005	127.3

Purchasing Power



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Activity 5.4 – Using Data & Statistics to Assess Economic Trends: Measuring the Economy

Worked Example

A family of four had an income of \$18 500 in 1970.

- Approximately what income would they need in 1995 to have the same standard of living?
- If their living expenses increased from \$14 750 in 1970 to \$67 800, by what percent did their expenditures increase in real terms?

Solution

- From the CPI table, we see that prices in 1995 were 104.2% of 1992 prices and 1992 prices were 1/24.2% of prices in 1970. That is,

$$\begin{aligned} \text{Prices in 1995} &= \frac{104.2\%}{24.2\%} \times \text{Prices in 1970} \\ &= 4.305785 \times \text{Prices in 1970} \end{aligned}$$

Therefore the income needed in 1995 would be $4.305785 \times \$18\,500$ or \$79 657.02

- Living expenses of \$14 750 in 1995 dollars are $4.305785 \times \$14\,750$ or \$63 510.33. Their living expenses have increased by a factor of $67\,800 / 63\,510.33 = 1.0675$ or 6.75% in real terms.

Year	GDP in \$billions 1997 = 100
1997	100.0
1998	105.1
1999	111.9
2000	118.7
2001	120.6
2002	124.5
2003	126.5
2004	130.4

Source: Statistics Canada

Gross Domestic Product (GDP)

The Consumer Price Index tells us how much prices have increased relative to any particular year, but it does not tell us whether the economy is robust and productive or whether it is sluggish and unproductive. One of the measures used to assess the health of the economy is the *gross domestic product* (GDP). This is the total value of all the goods and services produced in Canada. However, as observed above, the purchasing power of the dollar changes from year to year, so the GDP obtained in any particular year must be converted to a constant-dollar GDP before it can be compared to the GDP in another year. The conversion factor used is called a GDP price deflator and it is used much like the CPI was in the Worked Example above to compare different years. This constant-dollar GDP, which is also referred to as Real GDP, allows us to measure the change in the volume of goods and services produced. It is not affected by the price of these goods and services. The table shows an index of Canada's Real GDP for the years 1997 through 2004 (expressed in "constant" 1997 dollars) and relative to the GDP in 1997.

A total GDP growth of between 2.0% and 2.5% is generally considered consistent with a stable economy when there is full employment i.e., 94.0% to 94.5%. It is believed that a higher growth rate than this in the GDP indicates the threat of inflation, while a significantly lower growth rate in the GDP is consistent with a weak or stagnant economy.

Financial Post

Saturday, June 3, 2000

THIS WEEK IN MONEY

Economy Hits the Trillion Mark

BY PAUL VIEIRA

Canada has entered an exclusive field – the trillion-dollar economy club.

Statistics Canada reported this week that the country's gross domestic product (GDP) exceeded \$1-trillion for the first time with growth of a solid 1.2% in the first quarter of this year. Continuing export demands and strong growth in the domestic economy helped fuel the advance.

GDP in March rose 0.7% after receding in February for the first time following 18 months of continuous growth. "All of the economy's main industrial sectors advanced, except utilities and health services," StatsCan said.

Over the first quarter, exports grew 3.3%, business plant and equipment investment rose 2.7%, while personal income increased 1.4%.

Activity 5.5 – Exploratory Activity A

Researching the Economic Indicators

Statistics Canada is the main source for most economic data about Canada. (See Financial Post article.) Visit their home page to research the following economic indicators:

CPI

GDP

Employment

Money Supply

Working with a partner, visit Statistics Canada home page at www.statcan.ca and find the following information using the search tool on the site:

1 Consumer Price Index historical summary (CPI)

Record the CPI all-items index for 2005. What does the number mean?

2 Gross Domestic Product (GDP)

While CPI is provided in 1992 dollars, GDP data is provided in 1997 dollars. Study the GDP for the years 2001-2005. In what year did the GDP increase as a percentage of the previous year? Explain what this means in terms of the economy for that year.

3 Labour Force Characteristics (Employment)

In what year between 2001 and 2005 was the unemployment rate the lowest? What does this suggest about the Canadian economy?

What was the employment to population ratio in 2004? Can we calculate the employment to population ratio by dividing the number of employed people by the population of Canada. Explain why or why not.

4 Money Supply

To preserve the value of Canadian currency, the Bank of Canada sets a monetary policy that attempts to keep inflation within the 1 to 3 percent range (as measured by the CPI). One of the factors that the Bank of Canada uses to assess potential inflation is the *money supply*. Roughly speaking, this is the amount of Canadian money in circulation. Two of the most useful measures of the money supply are *M1* and *M2* defined as follows:

M1 is the total value of the currency in circulation (i.e., outside the banks) plus the total demand deposits in banks.

M2 is M1 plus the values of all savings accounts and term deposits in banks.

Record the values M1 and M2 for the years 2001–2005. Was the money supply increasing significantly during this period? Do you think this was an inflationary period? Give reasons for your answers.

The Bank of Canada web site at

www.bankofcanada.ca/en/backgrounders/bg-m2.htm, states: *The Bank's economic research indicates that the growth of M1 provides useful information on the future level of production in the economy. The growth of the broader monetary aggregates [e.g. M2] is a good leading indicator of the rate of inflation.*

– January 2000

No growth in the money supply is consistent with modest growth or deflation, while strong growth in the money supply might suggest impending price inflation.

Study the interest rates for the years 2001–2005. Do the interest rates suggest an inflationary trend during those five years? Does your conclusion agree with your conclusion in *Exercise 4*? Explain.

For more information on the money supply, you might wish to visit The Royal Canadian Mint web site at www.mint.ca





Activity 5.6 – Exploratory Activity B

Promoting a Fair and Equitable Market

Who Regulates the Stock Markets?

Whenever significant amounts of capital are involved, there is opportunity for a variety of abuses. In Canada, provincial and territorial authorities regulate the securities industry to promote capital markets that are fair, efficient and free of improper practices. The *Ontario Securities Commission* (OSC) administers Ontario's securities legislation. The OSC is also a member of the *Canadian Securities Administrators* (CSA).

The CSA is a council of securities regulators from the ten provinces and three territories. The regulators share a common mandate for investor protection. Securities regulators oversee Canada's stock exchanges, self-regulatory organizations (SROs) and industry practitioners such as mutual fund dealers or financial advisers. Based on mutual reliance among its members, the CSA is streamlining its administration of rules and regulations to ensure a more efficient capital market, improve harmonization of requirements to disclosure, and support a fair and equitable marketplace.

Where Is Important Company Information Found?

CSA sponsored initiatives include the *System for Electronic Document Analysis and Retrieval* (SEDAR) and the *System for Electronic Data on Insiders* (SEDI).

SEDAR is an online database of documents filed with securities regulators and provides information on all publicly traded companies in Canada, including annual reports, financial statements, news releases, and company prospectuses. SEDAR also profiles more than 6 500 companies and mutual funds, and is available free of charge to the public at www.sedar.com.

SEDI provides information to the market about the trading activities of those who manage or control issuers. It also serves to deter insiders (a director or senior officer of a reporting issuer, or company, with more than 10% direct or indirect voting authority) from trading based on confidential information. SEDI improves public access to insider reports by making such reports available on www.sedi.ca.

Who Administers the Regulations?

An important part of the regulatory framework is the role fulfilled by self-regulatory organizations. The Investment Industry Regulatory Organization of Canada (IIROC) is a national self-regulatory organization which oversees all investment dealers and trading activity on debt and equity marketplaces in Canada. IIROC was created in 2008 through the consolidation of the Investment Dealers Association of Canada and Market Regulation Services Inc. The Mutual Fund Dealers Association (MFDA) is the self-regulatory organization for the mutual funds industry. Under the Securities Act in Ontario, the OSC may recognize an SRO if it is satisfied that doing so would be in the public interest. This allows the SRO to regulate the standards of practice and business conduct of its members and their representatives in accordance with its by-laws, rules, regulations and policies.

Trading on the TSX is regulated by IIROC. As a recognized stock exchange, the TSX has been delegated powers by the OSC to monitor brokers who have access to the Exchange's trading system. All participating organizations must follow the rules and policies governing the trading of securities listed on the TSX. In addition, all companies listed on the TSX must satisfy specific requirements established by the TSX.

To explore safeguards employed by these organizations, visit the Universal Market Integrity Rules (Part 7) on www.iiroc.ca, and the OSC's Staff Notice 55-308 on www.osc.gov.on.ca. Then write a report to answer each of the questions below.

- 1 When a mining company discovers a rich new source of minerals or a business negotiates in secret a profitable merger, the company's officers and directors have this privileged information before the public. In markets that are not regulated, these "insiders" have the opportunity to profit by purchasing large numbers of shares below their actual value. Profiting from such information by either buying or selling stock is called *insider trading*.

What measures do market regulators such as IIROC and OSC take to ensure that such insider trading does not occur?

- 2 If a company employs senior officials whose decisions drive the company into bankruptcy, thousands of investors could lose their life savings. What safeguards are in place at the Toronto Stock Exchange to offer some protection for investors?
- 3 To decrease the share value of a company, a major shareholder of a company, in an unregulated market, could offer a large number of shares for sale. Once the price fell, the shareholder could repurchase the shares at a lower price and enjoy a substantial profit. This *manipulative trading* gives an unfair advantage to both insiders and major shareholders. How might IIROC prevent this from happening?
- 4 In an unregulated market, a broker could take your order to offer your stock for sale at a particular price and then sell it at a higher price. The broker might then purchase the stock from you at the price you requested and pocket the difference. How does IIROC seek to prevent this from happening?
- 5 Research these Canadian stock exchanges on the Internet and report what they are and what kinds of investments they include as their specialties.
 - TSX Venture Exchange
 - Montreal Exchange.



After we buy a stock, we would not be disturbed if markets closed for a year or two; we don't need a quote on our position ... to validate our well being.

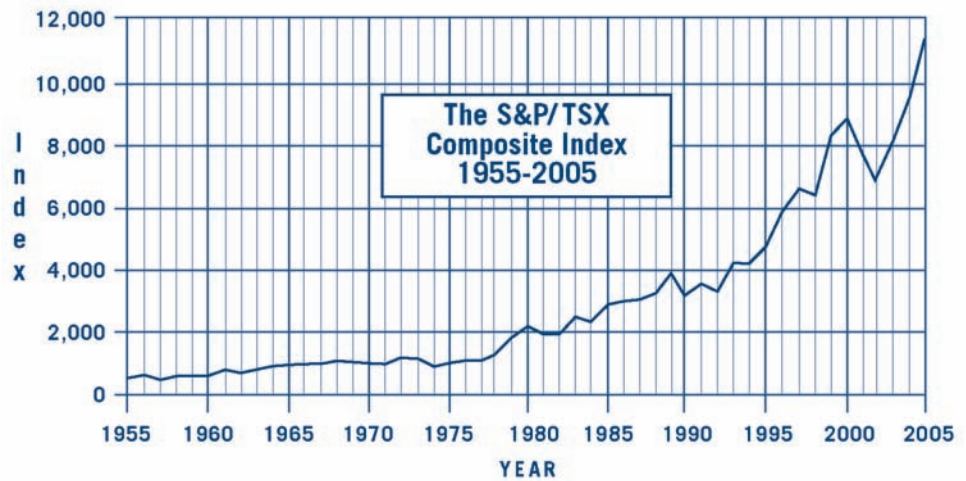
– Warren Buffett

(One of the world's most successful stock investors)

Activity 6.1 – Analysing Stocks as Investments

When Should You Buy Stocks?

Value investors like Warren Buffett believe that if a stock has intrinsic value, and you can purchase it below this value, then buy and hold the stock until its price rises to its true worth. Other investors believe in the adage, “Don't tell me what to buy, tell me *when* to buy.” That is, they believe that most stocks gain in price during a rising market, so it is important to buy early in a bull market trend. Included in this school of thought are the so-called *technical analysts* who study graphs such as the one below to determine the opportune time to buy stocks. They tend to be more concerned with timing the purchase than with the particular stock that is chosen.

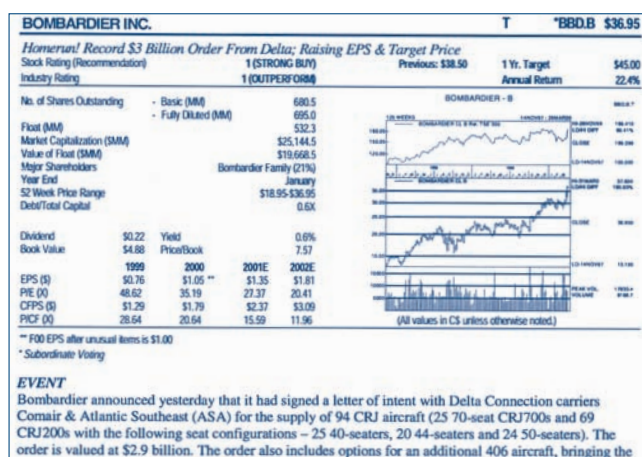


The graph above shows the average of the S&P/TSX Composite Index each year between 1955 and the year 2005. Using this graph, identify and record the years when it would have been most profitable to buy the stocks that contribute to the S&P/TSX Composite Index. Describe the shape of the graph during a bull market and during a bear market. Do you think there is a way to predict whether the graph will turn upward or take a downward dive? Explain your answer.

Activity 6.2 – What Stocks Should You Buy?

We noted on the previous page that value investors, like Warren Buffet, believe in searching for stocks that have intrinsic value. This process involves researching information about stocks that may be good candidates for investment and then analysing them to determine whether they have promising growth and earning potential. But where do you go to research companies? You may find a prospectus, which is a legal document that provides detailed information about a company's line of business, financial position and plans for the sale of stock. Other useful sources are shown below and others will be visited later in this activity.

- 1 Brokerage firms usually publish periodicals that list stocks that are recommended for purchase and present useful information to help you analyse the company's earning and growth potential. The clip to the right is taken from a newsletter issued on March 30, 2000. What was the price of Bombardier on that day? What price did the newsletter set as a one-year target?



- 2 Journals and newspapers such as the *National Post* (formerly *Financial Post*), the *Globe and Mail*, and *Canadian Business*, all produce annual magazines that rank Canadian companies according to various criteria such as profitability. Check those rankings to find the names of those companies that appear at the top of the list.
- 3 As noted in the exercises of *Activity 4*, the list of the biggest gainers, as well as the most actively traded stocks, are found daily in the newspaper. They will lead you to stocks that have made the greatest gains in a single day as well as the stocks that traded the greatest number of shares. This one is taken from *The Toronto Star*, June 9, 2000.
- 4 Newspapers and magazines are useful sources of articles about companies. The article on the right is taken from *The Toronto Star*, June 10, 2000. What does it report about the change in price of the Bombardier class B shares? What was the price at the end of trading on June 9, 2000? How does the price of the Bombardier shares on June 9, 2000 compare with the price on March 30, 2000 given in the article in 1. above? How close was the price on March 30 to the target price given in the newsletter shown above?

Daily most active stocks 06.09.00				
	Vol.	Chs.	Chg.	
Toronto				
BCE Inc	BCE	68243	37.95	+0.90
Nortel Networks	NT	44274	87.15	+0.05
Ranger Oil	RGO	31437	8.45	+0.30
Brookfield Ppy	BPO	28857	19.75	+0.20
Shaw Comms B	SJR.B	26179	31.00	-1.15
Airboss Amer	BOS	21825	2.35	-0.17
Manulife Finl	MFC	21260	28.00	+0.95
ATI Technlgs	ATY	20741	17.45	+0.75
Bombard B	BBD.B	20494	39.70	+1.45
Corel	COR	18813	6.95	-0.45
Montreal				
SouthMalaric				
Diadem Res				
Photochannel				
Autanabi Res				
Innovium Cap				
Tom Expl				
Freewest Res				
Limtech Techs				
Ced-Or				
NAR Resources				

Jet maker sells 50 planes to lease firm

FROM CANADIAN PRESS

Bombardier Aerospace has signed a \$2 billion deal to supply regional jets to a major U.S. aircraft leasing company, the latest lucrative agreement in what's been a banner year for the Montreal transportation giant.

The deal with GE Capital Aviation Services, announced yesterday, includes 50 firm aircraft orders worth almost \$2 billion, plus 100 options that could push the total value of the pact to just under \$6 billion.

Analysts and investors applauded the deal, pushing the company's class B shares up \$1.45 to close at \$39.70 on the Toronto Stock Exchange.



The balance sheet and the income statement will be studied more closely in the pages that follow.

Activity 6.3 – The Annual Report: A Snapshot of a Company's Economic Health

If you are a value-oriented investor, a company's annual report will be the most important document in your analysis of that stock. But first you must find out how to get it.

- 1 Many companies have their annual reports available at their company web site. Therefore a good place to start is at www.tsx.com
- 2 One of the sites accessible through these links is SEDAR (System for Electronic Documentation and Retrieval) www.sedar.com/homepage.htm

From the SEDAR web site, you can find the information you need from an online database of annual reports, financial statements, news releases, and company prospectuses.

And / Or

Call the investor relations department for the company and ask for the following:

- *Annual Report*
- *Quarterly Results*
- *Press Releases* – these give current information on company activities
- *Analysts Reports* – Analysts are hired by stock brokerage firms to analyse companies and make recommendations to buy, sell or hold a particular stock for clients of the firms. They are helpful in providing a base against which to see if current earnings per share match the expectations of the analysts.

Parts of an Annual Report

- 1 Report to the Shareholder from Chair/Directors/CEO
- 2 Management's Discussion and Analysis of Financial Condition and Results of Operations
- 3 Financial Highlights and Key Financial Ratios
- 4 Financial Statements
 - a) Balance Sheets
 - b) Income Statements
 - c) Cash Flow Statement
 - d) Statement of Retained Earnings
 - e) Notes to the Financial Statements
- 5 Historical Review or Summary Data
- 6 Corporate Information
 - a) Names of Officers and Directors
 - b) Corporate Facts
 - i Dividends
 - ii Share Capital
 - iii Annual Meeting
 - iv Stock Codes
 - v Head Office Location
 - vi Legal/Auditors
- 7 Auditors' Report

These are two of the most important sections in the annual report.

Activity 6.4 – How to Read an Annual Report: The Balance Sheet

Worked Example 1

The *balance sheet* is a snapshot of a company's financial position or shareholders' equity on a given date. A study of a balance sheet helps you determine whether a company is solvent and rich in assets or whether it is heavily encumbered with debt and at risk of not meeting its financial obligations.

The *shareholders' equity* in a public company is the value it has when everything it owes, called its liabilities, is subtracted from everything it owns, called its assets.

That is, $\text{Shareholders' Equity} = \text{Assets} - \text{Liabilities}$

From the balance sheets of two companies, A and B, which company appears to be in better financial health?

Company A		Company B	
in thousands of dollars		in thousands of dollars	
Assets		Assets	
Current Assets	\$ 1 456 872	Current Assets	\$ 186 359
Fixed Assets	513 017	Fixed Assets	3 496 847
	<u>\$ 1 969 889</u>		<u>\$ 3 683 206</u>
Liabilities		Liabilities	
Current Liabilities	\$ 9 743	Current Liabilities	\$ 312 569
Long Term Liabilities	63 017	Long Term Liabilities	370 307
	<u>\$ 72 760</u>		<u>\$ 682 876</u>
Shareholders' Equity		Shareholders' Equity	
39 000 000 Common		18 500 000 Common	
Shares Outstanding	\$ 22 925	Shares Outstanding	\$ 11 784
Retained Earnings	1 874 204	Retained Earnings	2 988 546
	<u>\$ 1 897 129</u>		<u>\$ 3 000 330</u>

Solution

A comparison of the shareholders' equity for both companies reveals that Company B has retained earnings of \$2 988 546 000, while Company A has retained earnings of \$1 874 204 000. This might suggest that Company B has greater value.

A closer look at the balance sheets reveals that most of Company B's assets are fixed assets, which may be *illiquid*, i.e., cannot be readily turned into cash to pay bills. But its current liabilities exceed its current assets. Company B could run into a cash flow problem. One way to measure a company's liquidity is to calculate the ratio of its *current assets* to its *current liabilities*, i.e., immediate payables. This is called the *current ratio*. For Companies A and B, the current ratios are respectively 150 and 0.60. Company A appears to be more solvent than Company B. However, the current ratio does not tell the whole story, so it would be necessary to look at last year's profit found in the *income statement*.



Current Ratio

$$\frac{\text{current assets}}{\text{current liabilities}}$$

Current Ratio for A

$$\frac{\$1\,456\,872}{\$9\,743} \approx 150$$

Current Ratio for B

$$\frac{\$186\,359}{\$312\,569} \approx 0.60$$

Activity 6.5 – How to Read an Annual Report: The Income Statement

Worked Example 2

While the balance sheet enables us to determine the net worth of a company and assess its liquidity, its prospects for profit in the current year are more accessible from its *income statement*. The income statement of a company displays its revenue and expenses for a given year. The profit (or loss) is found by subtracting the expenses from the revenue. $\text{Profit (or Loss)} = \text{Revenue} - \text{Expenses}$

- a) From the income statement of companies A and B, which company offers the higher earnings per share?
- b) If prices of A and B are respectively \$16 and \$84.50 per share, which stock seems to offer better value?

Company A		Company B	
Revenue	\$ 66 461 562	Revenue	\$ 148 015 108
Expenses	22 109 572	Expenses	97 586 974
Profit	\$ 44 351 990	Profit	\$ 50 428 134

Solution

- a) A comparison of the two income statements reveals that the profits or earnings made by Companies A and B were \$44 351 990 and \$50 428 134 respectively, so Company B made a larger profit. However, these earnings are distributed over different numbers of shares, so we must calculate the earnings per share for each company as shown on the right. We see that Company A made \$1.14 per share while Company B earned \$2.73 per share. Clearly Company B earned more per share than Company A.
- b) Although Company B earned more per share than Company A, the price of a share of stock of Company B is \$84.50 compared to \$16 for Company A. With \$84.50, we could buy more than five shares of Company A and earn more than 5 times \$1.14. That is, to compare the prices of the shares for the two companies, we divide the price per share by the earnings per share. This is called the price:earnings ratio, or more often, the *P/E ratio*. For stock in Company A, the P/E ratio is $\$16/\1.14 or about 14. For stock in Company B, the P/E ratio is $\$84.5/\2.73 or about 31. Stock in Company A has the lower P/E ratio and this suggests it offers a better value. Traditionally, companies sold at P/E ratios between 8 and 16. However, some technology stocks in recent years are trading with P/E ratios as high as 100 and greater. Those who buy these stocks believe that the company is in a rapid growth phase that will ultimately yield high profits or that someone will soon buy the stock at a higher price.

Earnings per Share

$$\frac{\text{current earnings}}{\text{number of shares}}$$

Earnings per Share for A

$$\frac{\$44\,351\,990}{39\,000\,000} \approx \$1.14$$

We get the number of shares outstanding from the balance sheet in *Worked Example 1*.

Earnings per Share for B

$$\frac{\$50\,428\,134}{18\,500\,000} \approx \$2.73$$

We get the number of shares outstanding from the balance sheet in *Worked Example 1*.

$$\frac{\text{P/E Ratio}}{\text{price per share}} \\ \text{earnings per share}$$

$$\text{P/E for A} \\ \frac{\$16}{\$1.14} \approx 14$$

Activity 6.6 – Summary of Criteria for a Financial Analysis

The analysis of the balance sheet and an income statement has led us to consider two ratios, the *current ratio* and the *P/E ratio*. It would require a small book to define and describe the numerous ratios that exist to analyse stocks. The table below summarizes some of the commonly used formulas. These ratios are tools that, used in combination, can provide useful indicators to assess the progress of a company over time or to make comparisons among similar companies.

Criterion	Explanation	Ratio	What it Measures
Profitability	<i>Return on Assets</i> Expressed as a percentage	$\frac{\text{Net Income}}{\text{Total Assets}}$	How well a company is using its assets (compared to last year or another company).
	<i>Return on Equity</i>	$\frac{\text{Net Income}}{\text{Equity}}$	How well a company is using money from shareholders (compared to last year or another company).
	<i>Profit Margin on Sales</i>	$\frac{\text{Net Income}}{\text{Net Sales}}$	How well a company is generating profits from sales (compared to last year or another company).
Asset Management (Efficiency)	<i>Inventory Turnover</i> Time it takes to turn over inventory. The fewer days, the more efficient management.	$\frac{\text{Inventory}}{\text{Cost of Goods Sold} / 365}$	How long it takes a company to sell merchandise.
	<i>Accounts Receivable Turnover</i>	$\frac{\text{Accounts Receivable}}{\text{Sales} / 365}$	How long it takes a company to collect its accounts receivable.
Cash Management (Liquidity or Solvency)	<i>Current Ratio</i> Liquidity is a measure of the company's ability to meet current debts.	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$	The current ratio measures whether or not the company has enough liquid assets to pay debts. 2:1 is generally considered to be favourable.
Debt Management (Leverage)	<i>Debt/Equity Ratio</i> Leverage is measured by the ratio of assets financed by shareholders to the total assets owned by the company.	$\frac{\text{Debt}}{\text{Equity}}$	How much of these assets are financed by the shareholders. 50:50 is generally considered to be favourable.
	<i>Debt Ratio</i>	$\frac{\text{Total Liabilities}}{\text{Total Assets}}$	How much of the assets are financed by borrowing.
Cost Management (Control)	<i>Gross Profit Margin</i> The company's rate of profit after allowing for the cost of goods sold.	$\frac{\text{Gross Profit}}{\text{Revenue}}$	Measures the efficiency of management in turning over the company's goods at a profit (the higher the ratio, the better).
Financial Ratios	<i>Dividend Yield</i>	$\frac{\text{Annual Dividend}}{\text{Share Price}}$	Measures the return on investment (should show an increase).
	<i>Earnings per Share (EPS)</i>	$\frac{\text{Net Income}}{\text{Number of Shares}}$	Measures how much each share has earned (should show an increase).
	<i>Price Earnings Ratio (P/E)</i>	$\frac{\text{Price per Share}}{\text{Earnings per Share}}$	Facilitates the comparison of different stocks. 8:12 is generally considered to be normal. Historically, P/E ratios have tended to fall in the 8:12 range, however market conditions can lead to significant variations.
	<i>Price Earnings Growth Rate (PEG)</i>	$\frac{\text{Price Earnings Ratio}}{\text{Growth in Earnings per Share}}$	The stock price relative to the expected growth in earnings of a company.



The ratios in column 4 are general benchmarks and may vary with the industry.



Activity 6.7 – Exercises

- 1 The closing price per share, the dividend and the earnings per share are given for several stocks in the table. Complete the table by calculating the *dividend yield*, i.e., the dividend as a percentage of the share price and the P/E ratio for each stock. Note that dividend yields are 0 if no dividend is paid. Also P/E ratios do not exist if the EPS is negative.

Symbol	Stock	Close	Dividend	EPS	Div Yield	P/E Ratio
CAO	Alpha Industry	4.50	0.14	0.28		
NCX	Beta Factors	30.15	0.40	4.59		
CBY	Cdn Finance	10.00	0.29	0.31		
DEY	High Energy	37.50	none paid	0.29	N/A	
ELD	De Soto Ltd.	0.73	none paid	0.09	N/A	
SKL	Fancy Cafes	7.90	none paid	-0.67	N/A	N/A

- a) Which of the stocks in the table has the highest growth expectation?
Give reasons for your answer.
- b) Which company's earnings are not expected to grow as fast as the others?
How do you know?
- c) Which stock gives the highest yield? Explain how you know.
- 2 a) The table below shows some data from the 2005 annual reports of Company S and Company N. Enter these data in a spreadsheet. Then calculate the percentage change in the assets of each company from year-end 2004 to year-end 2005. Save your spreadsheet for Part b).

	Company S		Percentage Change for Company S	Company N		Percentage Change for Company N
	2005	2004		2005	2004	
Assets	\$155 000	\$120 000		\$400 000	\$350 000	
Net Income	\$9 500	\$7 500		\$35 000	\$28 000	
Revenue	\$85 000	\$65 000		\$280 000	\$250 000	
Shareholders' Equity	\$110 000	\$86 000		\$350 000	\$325 000	
Number of Shares	300 000	280 000		600 000	500 000	
Stock Price	\$0.74	\$0.56		\$1.65	\$1.55	
Dividends	\$0.07	\$0.05		\$0.14	\$0.12	

From your completed spreadsheet, identify which company is growing faster. Give reasons for your answer.

2 b) The table on the right shows the industry standards for various indicators. Add rows to the spreadsheet you created in Part a) to calculate the quantities shown in this table for Companies S and N. Using the appropriate quantities, describe which company is more profitable, and which company investors seem to favour. Describe how these companies compare with the industry standard.

3 The table below displays ratios calculated for Company XYZ for 2004 and 2005. Complete column 4 by indicating for each ratio whether the company is better or worse in 2005 than in 2004. Then complete column 5 by identifying the criterion associated with that particular ratio. e.g. profitability, efficiency, control of costs, leverage (debt), and liquidity.

4 The table on the top right displays selected ratios calculated for a company from the 2003, 2004 and 2005 annual reports. Study this table, then indicate whether you would invest in this company. Support your answer with reasons.

2 b)

	Industry Standard
Return on Assets	9%
Profit Margin on Sales	11%
Return on Equity	8%
Earnings per Share	N/A
Book Value (per share)	N/A
Stock to Book Value	N/A
Dividend Yield	5%
P/E Ratio	32
PEG Rate	N/A
Debt/Equity Ratio	N/A

3

Indicator	2005	2004	Better/Worse	Criterion
Return on Assets	5.4%	3.4%		
Return on Equity	4.3%	5.2%		
Profit Margin on Sales	2.3%	1.7%		
Inventory Turnover	30 days	25 days		
A/R Turnover	25 days	29 days		
Current Ratio	1.5	1.4		
Quick Ratio	1	0.7		
Debt/Equity Ratio	60%	40%		
Debt Ratio	35%	55%		
Gross Profit Margin	22%	21%		
Dividend Yield	6%	4%		
Earnings per Share	\$2.34	\$2.14		
Book Value	\$32.23	\$45.23		
Price Earnings Ratio	43	24		
Price Earnings Growth Rate	1.4	1.0		
Relative Strength Index	1.23	1.45		

4

Indicator	2005	2004	2003
Return on Assets	7.25%	9.97%	7.60%
Return on Equity	7.33%	13.25%	7.47%
Profit Margin on Sales	11.63%	20.00%	18.94%
Inventory Turnover	3.90	2.11	1.66
A/R Turnover	4.67	2.80	3.18
Current Ratio	2.04	1.30	1.73
Quick Ratio	1.60	0.82	1.00
Debt/Equity Ratio	76.44%	45.02%	38.07%
Debt Ratio	30.83%	122.12%	162.67%
Gross Profit Margin	30.23%	38.38%	41.67%
Dividend Yield	6.00%	1.85%	1.43%
Earnings per Share	\$1.87	\$3.31	\$1.63
Book Value	\$20.26	\$18.57	\$15.66
Price Earnings Ratio	13.39	8.15	17.23



Activity 6.8 – Exploratory Activity

How to Evaluate Internet Sites

Not all web sites are created equal. Some web sites are authoritative, well-researched, and frequently updated, while others may be erratic, contain incorrect information, or have a special interest that can bias the information given. Here are some criteria that will help you evaluate web sites.

Check the Content

Ask yourself these questions as you peruse the web site.

- Purpose: What is the purpose of the web site?
 - to inform? to persuade? to sell? to explain?
 - Audience: Who is the audience for this web site?
 - Links:
 - Are there any criteria for link selection?
 - Is the site inward-focused (links within the site) or outward-focused (links outside the site)?
 - Is there a balance between inward- and outward-focused links?
 - Does the web site agree with information you have already found?
 - Is the information fact or opinion?
 - Is the content biased?
-

Analyse the URL (Universal Resource Locator)

The URL consists of the domain name plus three letters that describe the sponsoring organization. These three letters suggest the answers to some of the questions above.

.com means commercial and is business oriented

.edu means education and is a university or college

.k12 means it is a school (kindergarten to grade 12)

.org means it is a non-profit organization

.gov means government

.net means it is an internet provider

~ means it is a personal web page. Personal web pages tend to be opinion-based.

In addition, countries have their own codes, e.g., .uk United Kingdom, .ca Canada, .jp Japan, and .fr France

Ascertain the Currency and Source

- Is the author of the material identified? What is the authority or expertise of the individual or group that created this site?
- When was the web page created and last updated?
- Are there any links that don't work?

Step 1

There are many sites on the Internet that provide information on stocks.

Visit one of these sites and find a company to investigate further:

www.tsx.com

<http://ipo.investcom.com>

<http://money.canoe.ca>

Step 2

Visit the company web site you selected in *step 1* and see what you can find out about the company.

Step 3

Search other sites using a search engine to find out more about the company you have chosen.

Select some of the evaluation criteria from the previous page and evaluate the web sites as you access them. Record your assessments.

Step 4

Write a report that includes the following elements:

- an evaluation of the web sites you visited.
- a recommendation to buy or not to buy stock in the company you investigated.
- a list of at least ten pieces of evidence to support your recommendation.



Activity 7 – Project Management Checklist

Topic	Specific Activity	Notes/Checklist
<i>Introduction</i> Creating an Investment Portfolio	Record names of group members. All group members read, discuss and share a common understanding of the investment portfolio task. Group members chosen with attention to the following preferences: math, writing, organization, and coordination (use Worksheet 1, page 162).	
Compound Interest & Accumulated Value	Broom Hilda cartoon – write the formula and give an example of how you calculate compound interest.	
Rule of 72	Explain the Rule of 72 and give an example.	
<i>Portfolio</i>	Read the handout – “The Five Dimensions of an Investment Portfolio” (page 124).	
Team/Company Name	Choose a name, record on handout, add to portfolio (use Worksheet 1, page 162).	
Team/Company Logo	Decide and draw a graphic of your team logo (use Worksheet 1, page 162).	
<i>Step 1: Investor Personality Profile</i>	<ul style="list-style-type: none"> • Identify your client. • Discuss alternatives for potential client, then team members agree on a client. 	
Describe your client	<p><i>Investor Personality Profile</i></p> <p>A client profile is prepared and includes: age, marital status, monthly income, spending habits, saving patterns, expenses and any other relevant factors. Discuss and specify in your portfolio notes how these terms relate to your client’s profile (use Worksheet 1, page 162).</p>	
<i>Step 2: Investment Goals</i>	<ul style="list-style-type: none"> • Read handout “Step 2: Investment Goals.” • Describe your client’s investment goal. • Write the goal in dollars (\$). • Notes for Step 2 complete and included in team portfolio (use Worksheet 2, page 163 and 164). 	
<i>Step 3: Asset Allocation Model</i>	<ul style="list-style-type: none"> • Read the handout “Step 3: Asset Allocation.” • Read and discuss the “Asset Allocation Categories” chart on page 127. • Describe the term “Asset Allocation Categories.” 	
Complete for your portfolio	<p>In note form in your portfolio define and give an example of each of the following:</p> <ul style="list-style-type: none"> • cash and cash equivalents • fixed Income • equity • speculative <p>(complete Worksheet 3, page 165).</p>	

Adapted from J. David-Wilson, Iroquois Ridge High School, Oakville, 2000

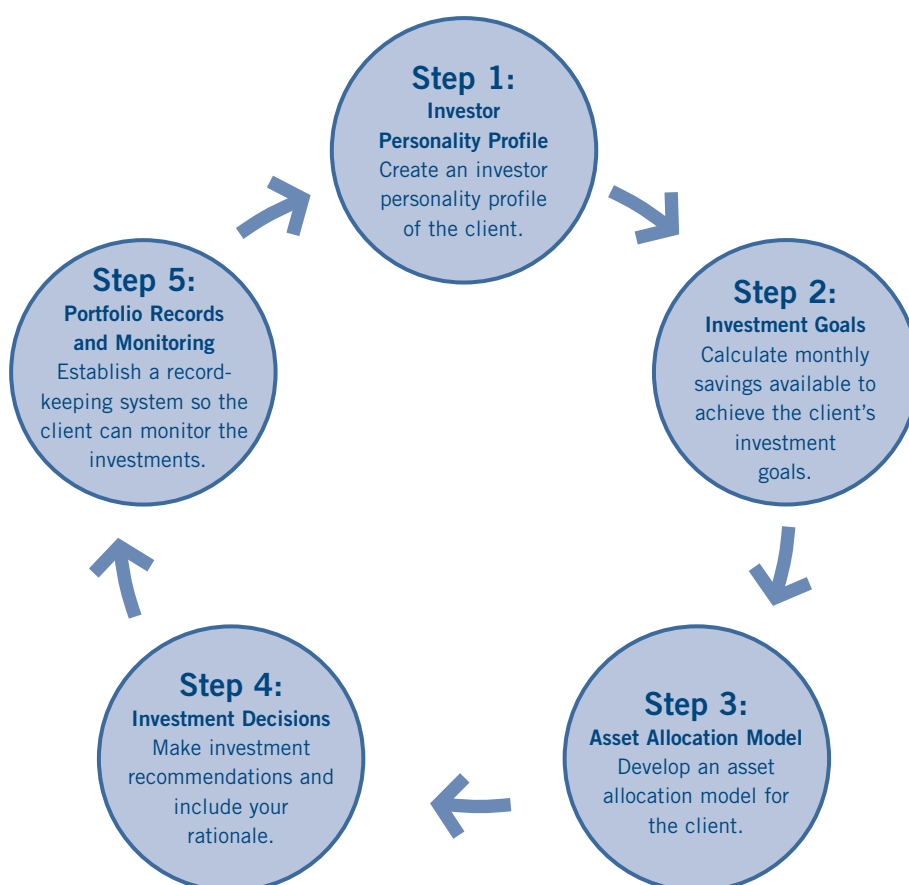
Topic	Specific Activity	Notes/Checklist
Connecting your learning about asset allocation to your client	<ul style="list-style-type: none"> • Complete the “Exploratory Activity” for Step 3 and make notes. • Include the page in your portfolio. 	
Future Value	<ul style="list-style-type: none"> • Read the handout “Future and Present Value.” • Define future value. • Write the formula for future value. • Complete the examples on the handout. • Design and complete a future value example for your client – include in your portfolio. 	
Present Value	<ul style="list-style-type: none"> • Read the handout “Future and Present Value.” • Define present value. • Write the formula. • Complete examples on the handout. • Design and complete a present value example for your client. 	
<i>Step 4: Investment Decisions</i>	<ul style="list-style-type: none"> • Define: Capital Market, Institutional Investor, Individual Investor, Primary Distribution, Secondary Market. • Discuss and complete the chart for your client's investment – include the chart in your portfolio (use Worksheet 4, page 166). 	
Mutual Funds	<ul style="list-style-type: none"> • Read Step 4 “Investment Decision.” • From your reading, write the following definitions: Mutual Funds, Units, Right of Redemption and Net Asset Value per Share (NAVPS), Volatility, Rates of Return, Management Expense Ratio. • Think about the benefits of Mutual Funds and make notes. • Include above notes in your portfolio (use Worksheet 4, page 167). 	
<i>Step 5: Portfolio Records and Monitoring</i>	<ul style="list-style-type: none"> • Read Step 5 from handout “Portfolio Records and Monitoring.” • Portfolio checked by group members with this project management checklist for completeness (use Worksheet 5, page 168). 	
Your project completion plan	<ul style="list-style-type: none"> • Make a plan from the last project lesson day to your presentation date of all the tasks that have to be accomplished. • Include your plan in your portfolio. 	
Investment Project	<ul style="list-style-type: none"> • Team members read project rubrics. 	
Rubrics	<ul style="list-style-type: none"> • Team members work on portfolio completion, presentation and report to client. 	
Team Survey	<ul style="list-style-type: none"> • Complete “How Well Did We Work Together?” survey individually and then as a team. 	

If you don't know who you are, the stock market is an expensive place to find out.

– George Goodman

Activity 7 – The Five Dimensions of an Investment Portfolio

Your financial future depends on the planning and research you invest in creating your personal investment portfolio. In this activity, you will play the role of a financial planner who will create a personal portfolio for a fictitious client. You will follow the five main steps involved in selecting various investments to ensure they grow in value at a maximum rate, corresponding to the risk tolerance of your client. These steps are highlighted in the graphic below and will be dealt with in more detail as you proceed through this activity.



Step 1: Investor Personality Profile

The investor personality profile reflects your client's personality as it relates to his or her tolerance for risk, need for liquidity, and the timeline for reaching goals.

Risk

Risk is the degree of uncertainty about the expected return from an investment, including the possibility that some or all of the investment may be lost. With some securities (e.g., Canadian government treasury bills) there is very little risk that investors will lose any of their initial investment. With some other securities, the risk of loss can be substantial. Some people can tolerate more risk than others.

Return

Return is the overall profit (after taxes) that you might expect to receive from your investment – either as income, in the form of interest or dividends, or as capital gains (or losses) resulting from changes in the market value of the security. The higher the expected rate of return of a security, the greater the risk. Tax implications are important in planning for maximum returns.

Time Frame

Time frame is the number of years available to invest. For any particular goal, the shorter the time available, the more money must be invested each month.

Liquidity

Liquidity is the ease with which the investment can be turned into cash, at or near the current market price. Some securities, such as mutual funds, offer liquidity by allowing investors to redeem their securities on short notice. Some investors like to be able to get their cash quickly, while others will wait.

It is important to balance all four of these considerations to reduce risk, while increasing return. In addition to these, you must consider two other factors that you met previously – inflation and diversification.

Inflation

Inflation reduces the purchasing power of money. During inflationary times, the return on investments may not keep pace with the rate of inflation, so purchasing power is decreased. A suggested guideline is to choose investments that yield the inflation rate plus three percent. Promised returns above this amount may carry high risk. Most programs on the Internet will ask you to suggest an anticipated inflation rate.

Diversification

Diversification is the process of reducing risk by spreading money among various types of investments. Because certain investments perform better than others in certain economic conditions, you can reduce risk by selecting investments with varied risk-return characteristics. Putting money into a variety of investments lessens the risk of loss resulting from any one investment's poor performance.

The Internet has many programs that allow you to assess a client's personality and create an asset allocation mix that matches that personality. Some of these links are provided later in this activity.

Step 2: Investment Goals

The starting point for your investigation is to determine how much money your client is going to need to achieve his or her goal. The Internet has many online interactive tools to help you calculate these numbers. Begin by using a search engine. To use a search engine effectively you need to be precise with your language. There are many suggested sites in this activity, but if you want to find your own, select a search engine and type in “Financial Tools Canada” or “Investing Tools Canada.”

What you are looking for are sites that have links to other sites. You might want to add the word link to your search. Links are sites that other people have found through search engines and recommended to others. Good web sites organize their links.

Look at the following descriptions of a link page. Notice how the links are organized and described.

General Finance & Taxes – Money planners, net worth, cash flow, taxes, inflation, currency conversion, financial services, etc.

Financing Education – How much do you need to sock away for your education, or your child’s education? How does the Canada Education Savings Grant figure into the picture?

Insurance – Want to calculate how much life or disability insurance you need? How about how long “they” expect you to live? You can even check out some premiums.

Investment Calculators – Asset allocation, rate of return, growth, compound interest, present value, bonds, stocks, etc.

Loans, Leases & Mortgages – Payments, amortization, rent vs. own, lease/buy and more.

Retirement Calculators – For planning and enjoying retirement. (RRSP and RRIF calculators included.)

More Calculators – Miscellaneous calculators and links to other calculator link pages.

Here is a web site to visit:

www.tcalc.com

This site asks you to input data and then does all the calculations. There are many online calculators in the above site. Online calculators require you to have numbers to input. Make sure you write down all the numbers you used or print off the input page before asking for the calculations.

Which of these links will tell you:

- how much money you need to go to university?
- about asset allocation?



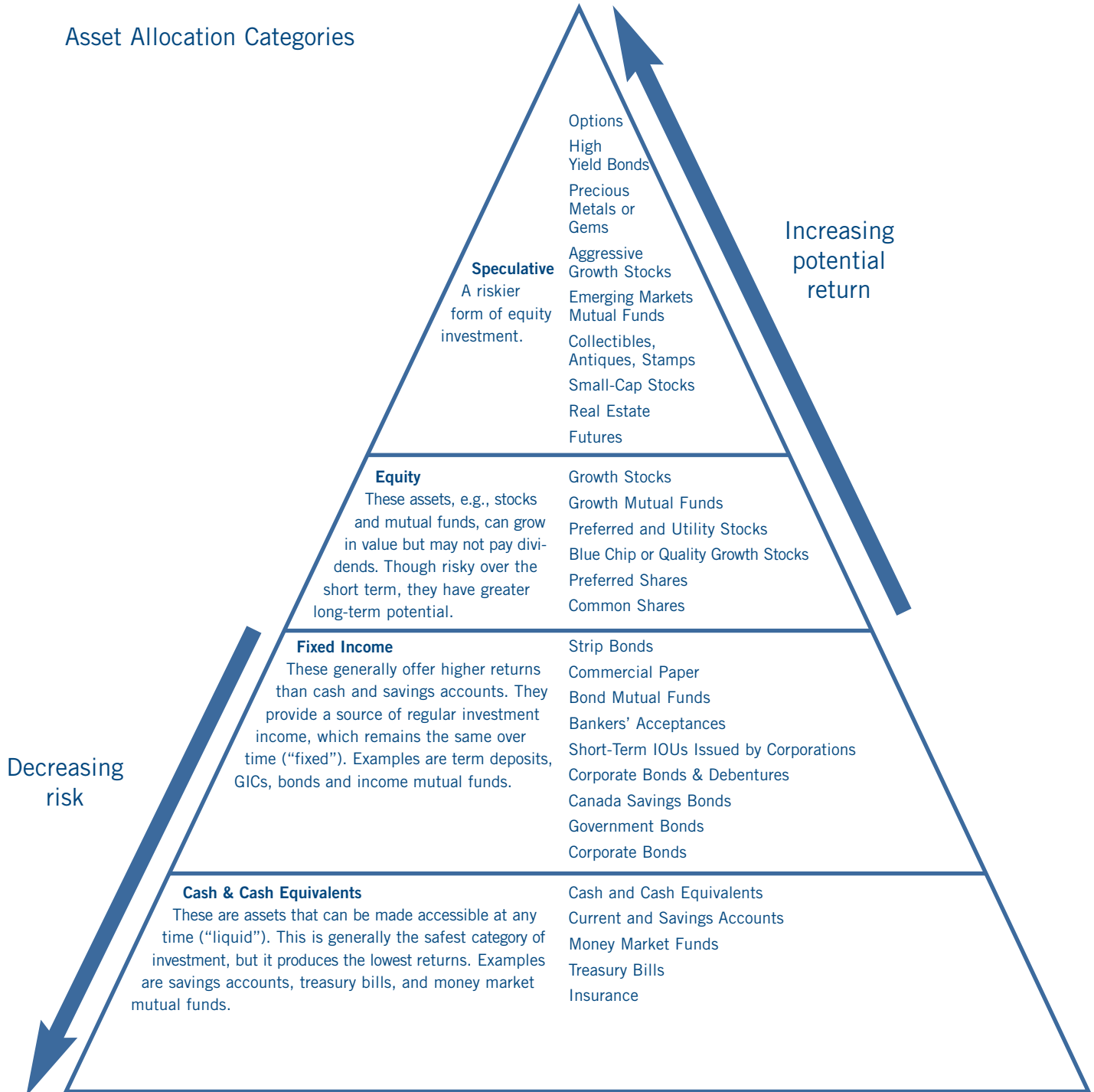
This article appeared in the *Financial Post* on June 17, 2000.

Step 3: Asset Allocation Model

Asset allocation is the method used to divide a portfolio into different classes of investment. This allocation should reflect the investor personality of the client.

There is a poster from the Canadian Securities Administrators titled, *Characteristics of Various Types of Securities*, available from the securities commission in your province.

Asset Allocation Categories





REITs – (Real Estate Investment Trust) is a company that owns and sometimes operates income-producing real estate (i.e., apartments, malls, offices, and industrial parks).

GICs – (Guaranteed Investment Certificates) are certificates offered by banks, trust companies and credit unions, which offer a form of principal and interest guaranteed for the term of the certificate.

Royalty Trusts – Investments that tend to be energy-related, focusing on fossil and synthetic fuels.

Step 4: Investment Decisions

The investment pyramid in the previous section shows there are many different investments possible within each asset allocation category. *Mutual funds* are included in all categories because there are a variety of different kinds of mutual funds, each with its own liquidity and risk level. As discussed on page 96, mutual funds offer diversification across industries and over various international markets. Thus the small investor can reduce the risk that is inherent in the ownership of a small number of stocks.

In a mutual fund, a professional money manager decides how to invest your money and that of others. Each fund has its own investment objectives and invests in some combination of bonds, cash or stocks.

On purchasing a mutual fund, the investor receives exchange units or shares of that fund. A mutual fund's unit value is described as the *net asset value per share* (NAVPS). The NAVPS is calculated by taking the total value of the fund if everything were sold on that day, less any outstanding debts it owes, and dividing by the number of units held by all the fund's investors. For example, if a fund is worth \$10 million (value less what it owes) and has one million units outstanding, the NAVPS will be \$10. If you own 10 units your investment is worth \$100.

There are also a variety of alternatives to mutual funds, such as: *index-linked GICs*, *royalty trusts* and *REITs*. Research these terms to discover what they are and consider them for inclusion in your client's portfolio. Choose from all the available investments those that are best for your client. You will need to decide how much of your client's savings will go to each investment. You must also decide on a date of purchase and the cost.

Step 5: Portfolio Records and Monitoring

You have determined how much money your client needs to reach a goal. You have calculated an amount of money needed weekly, monthly or yearly to reach those goals. You have chosen an asset allocation model that reflects your client's investor personality. You have selected several investments within each category that fit your investment criteria and decided how much of your client's savings will be put into each investment. Now you must find a method to record the purchase of those investments so that your client can verify these transactions and monitor the fluctuating investment values on the Internet.

You have several choices: software, spreadsheets, databases and online portfolio programs. You will find the best solution by trying them out. See how easy or hard it is to enter transactions. Look at the reports they generate and see if they provide you with the information you want.

Activity 7 – Investment Portfolio Report Rubric



	1	2	3	4
Investor Personality Profile (10%)	<ul style="list-style-type: none"> Limited evidence of realistic profile Limited evidence of the interview questions a financial planner would ask Limited description of type of investor 	<ul style="list-style-type: none"> Some aspects of profile; but too brief Some questions to show a client interview took place Superficial description of the investor/client 	<ul style="list-style-type: none"> Most aspects of an investor profile because of an interview Good client profile provided Good description of investor 	<ul style="list-style-type: none"> Complete client profile, age, gender, education and/or work, income, savings Interview described in detail Complete realistic investor personality type described
Investment Goals (20%)	<ul style="list-style-type: none"> Few elements were evident 	<ul style="list-style-type: none"> Some elements were evident 	<ul style="list-style-type: none"> Most elements were evident 	All elements are evident: <ul style="list-style-type: none"> – Goal stated clearly – Investment plan and dollar amount required to meet goals – Clear and objective evidence of calculations to meet goals
Asset Allocation Model (10%)	<ul style="list-style-type: none"> Limited explanation and variety of investment 	<ul style="list-style-type: none"> Description of client choices for investment not supported by information on how they met client needs 	<ul style="list-style-type: none"> Description of the choices for investment includes most information given about how they met client needs 	<ul style="list-style-type: none"> Describes and demonstrates an understanding of risk, liquidity, return and time frame in selecting the asset allocation for client needs
Investment Decisions (40%)	<ul style="list-style-type: none"> Random, disorganized presentation with little evidence of structure for analysis and investment decisions 	<ul style="list-style-type: none"> Some evidence of a structure for analysis exists but some information or steps are missing 	<ul style="list-style-type: none"> Presents a coherent structure for analysis and investment decisions but is sometimes difficult to follow 	<ul style="list-style-type: none"> Description clearly and concisely includes: <ul style="list-style-type: none"> – the choices and reasons for investments – names, specific investments, institution (reflects research) – gives detailed information about how they meet client
Portfolio Records and Monitoring (20%) Report Appendix <input type="checkbox"/> All classwork activities <input type="checkbox"/> Homework assignments included	<ul style="list-style-type: none"> Few assignments, notes, other hand-outs and learning materials presented in class included in portfolio report Few, if any, homework assignments included 	<ul style="list-style-type: none"> Some assignments, notes and classwork included in investment portfolio 	<ul style="list-style-type: none"> Most assignments, notes and classwork included in investment portfolio report Portfolio is organized 	<ul style="list-style-type: none"> Classwork, assignments and notes included in investment portfolio report Portfolio is organized Portfolio report indicates how client will be assisted by your investment team



Activity 7 – Investment Portfolio Presentation Rubric

	1	2	3	4
Group Involvement	<ul style="list-style-type: none"> Limited evidence of preparation Limited group member involvement 	<ul style="list-style-type: none"> May have appeared rushed or too brief Some group members involved 	<ul style="list-style-type: none"> Good organization of pace and flow with a few gaps Good group member involvement 	<ul style="list-style-type: none"> Well organized pace and flow of information All members participated
Visuals	<ul style="list-style-type: none"> Few elements were evident 	<ul style="list-style-type: none"> Some elements were evident 	<ul style="list-style-type: none"> Most elements were evident 	<ul style="list-style-type: none"> All elements of visual presentation were evident: <ul style="list-style-type: none"> – Clear graphics – Appropriate labels – Well organized – Good use of colour, space
Coherence	<ul style="list-style-type: none"> Little explanation of choices 	<ul style="list-style-type: none"> Explanation of client choices for investment not supported by information on how they met client needs 	<ul style="list-style-type: none"> Explains the choices for investment and gives most of the information about how they met client needs 	<ul style="list-style-type: none"> Explain clearly and concisely the choices for investments and give detailed information about how they meet client needs
Organization	<ul style="list-style-type: none"> Random, disorganized presentation with limited evidence of structure for analysis and investment decisions 	<ul style="list-style-type: none"> Some evidence of a structure for analysis exists but some information or steps are missing 	<ul style="list-style-type: none"> Presents a coherent structure for analysis and investment decisions but is sometimes difficult to follow 	<ul style="list-style-type: none"> Presents a systematic, coherent, organized structure for the analysis and investment decisions

Activity 7 – Student Assignment: Creating an Investment Portfolio

Your team will play the role of a financial planner who will propose a personal portfolio for a client. Your team will present your findings in two forms:

- a written report for the client and
 - a presentation of the results to the client.
-

Presentation: 20% of the Total Mark

The presentation to the client must include visuals (graphs) and highlight the key results of the report. It should be no longer than 10 minutes and be given to help the client understand the report and the portfolio.

Criteria for the Presentation Mark

Group Involvement: Was the presentation organized and completed within the allotted time to show that it had been practised? Did each group member participate?

Visuals: Were the visuals professional and easy to read and understand – appropriate headings, properly labelled and related to the portfolio selection?

Coherence: Did the presentation explain clearly to the client the choices made and how they met the needs of the client?

Organization: Did the presentation reveal the underlying organizational structure used in the analysis and investment decisions?

Report: 80% of the Total Mark

The report should have a table of contents and be organized into the following sections. (See the next page for the criteria.)

- 1 Investor Personality Profile
- 2 Investment Goals
- 3 Asset Allocation Model
- 4 Investment Decisions
- 5 Portfolio Records and Monitoring

Criteria for the Report Mark

A. Investor Personality Profile (10%)

You have the freedom to create your fictitious client but you must choose either a university education (for a child) or retirement as his or her investment goals. Your client may be any age, sex or marital status you wish. You determine the person's occupation, savings, income, number of children, and RRSPs. As you do the investor profile activity, try to answer the questions as your client would. Keep track of the questions and answers as part of the profile. Most programs name the investor personality type. When you are finished you must write a profile of your client.

Criteria: Has the team created a realistic profile of the client and provided answers to the kinds of questions a financial planner would ask? Is the goal clearly stated in terms of time?

B. Investment Goals (20%)

In this section you will state specifically how much money the client will need to meet his or her investment goal and how much the client must save weekly, monthly or yearly to meet that goal. You will use online calculators to determine these numbers.

Criteria: Has the team stated goals clearly and given dollar amount required to meet them? Has the team offered clear and objective evidence to explain the monthly savings required to meet the goals? Has the team properly referenced all sources?

C. Asset Allocation Model (10%)

In this section you use the investor profile to develop an asset allocation model dividing the investments into cash, fixed income and equity. Explain your choice.

Criteria: Has the team shown an understanding of risk, liquidity, return and time frame in selecting an asset allocation? Has the team offered clear and objective evidence to support their asset allocation?

D. Investment Decisions (40%)

This section recommends specific investments to be part of the asset allocation for the portfolio. These must be real investments and the costs of acquisition should be identified. There is no limit on the number of investments chosen but each should be chosen for a specific reason.

Criteria: Does the team have specific investments – name, institution, costs, etc.? Does the team offer reasons why one investment was chosen over another? Is there diversity within the category and a reason for that diversity? Do one or more of the choices reflect research and a desire to try something different and less traditional?

E. Portfolio Records and Monitoring (20%)

This section recommends a method by which the client can record and monitor his or her investments. It also includes detailed instructions and samples of how to use the program and evaluate the reports generated by the program.

Criteria: Does the team offer reasons for choosing the program they did? Reasons should include: how it handles transactions, reports, returns, and calculates returns. Has the team included printouts to support these reasons?

Activity 7 – Exploratory Activity

Step 1: Setting Personal Goals

A good way to begin the goal exploration activity and investor personality profile is to analyse your own personal goals and discover your own investor personality. The Canadian Bankers' Association at www.yourmoney.cba.ca has a series of quizzes and interactive activities to get you started thinking about goals.

The following sites are specific sites within the Canadian Bankers' Association web site.

Pop Quiz – This is an interesting quiz to see what you already know about money.

www.yourmoney.cba.ca/eng/tsamprogram/pop_quiz/pop2.htm

Personal Profiler – This will test your money management skills.

www.yourmoney.cba.ca/eng/tsamprogram/know_yourself/knowthyself.cfm

Setting Goals – This site will help you identify your goals.

www.yourmoney.cba.ca/eng/tsamprogram/know_yourself/setyourgoals.cfm

Budget Check – This site will help you find out where your money is going.

www.yourmoney.cba.ca/eng/tsamprogram/budget/budgetrealitycheck.cfm

Reality Check – These are quizzes to help you determine the cost of education, the cost of becoming an entrepreneur, or leaving home and working.

www.yourmoney.cba.ca/eng/tsamprogram/planning_future/index.htm

Step 2: Investor Personality Profile and Asset Allocation Model

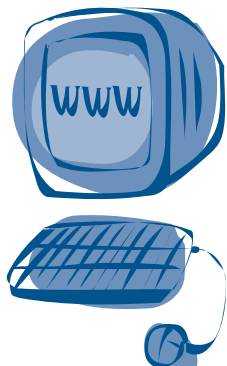
Your team has begun to develop a profile of the client. These sites will ask you questions and suggest an allocation model that meets your client's personality. You may find questions for which you have no answer and may have to return to your team to brainstorm. Try several sites below to see if they agree. Each site will give you a name for your investor personality.

All sites will suggest an allocation model for the investor profile type. Many of the sites allow you to investigate different investments more fully. Make notes. Remember, most of these sites are created by financial institutions that are in the business of selling their investment products and are therefore biased in their recommendations.

Suggested Links

- 1 Canada Life – Investor Type Profiler: www.canadalife.com This test will help you determine what kind of investor you are and also gives you a sample asset mix.
- 2 MatchMaker: www.bmo.com/tools/ This tool offers the advantage that it combines personality and allocation objectives.
- 3 Scotiabank Investment Centre: www.scotiabank.com Take time and explore all the different places you can invest. Make notes if you want.





Step 3: Investment Goals & Online Calculators

Your client has a specific goal; either educational or retirement. These sites are organized into educational and retirement goals so you can choose the sites that match your client's goals.

Educational Goals

There are many web sites with education planning tools to help you calculate the amount of money your client will need to go to college or university.

Try this test first to determine how much money your client will require. Remember to plan and record your approach.

	Lives at Home	Lives Away
Estimated Total Future Cost		
Additional Future Savings Requirements		
Amount Needed to Be Saved Monthly		

TD Canada Trust (Planning page):

www.tdcanadatrust.com

Bank of Montreal (Personal Planning page):

www.bmo.com

Human Resources and Social Development Canada (Training and Learning):

www.hrsdc.gc.ca/en/home.shtml

Retirement Goals

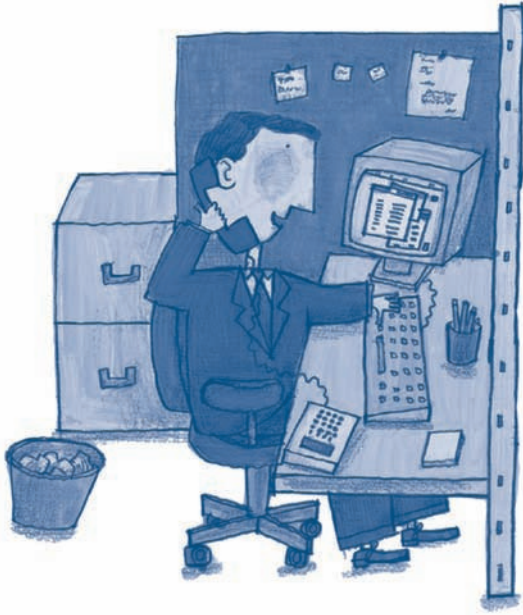
Many online calculators ask you for information you may not know because you are not working yet or they may use terms you don't understand, such as defined pension plan benefit. You might have to do some research before you use the calculator. In either case, record the results of your research and your assumptions. See also the caveat about online calculators on page 126. Some sites that you will find easy to use are:

Seclonlogic Inc.: www.seclonlogic.com/

Scotiabank Reality Check: www.scotiabank.com

Canada Trust: www.tdcanadatrust.com/

The key question is always how much money you need to save weekly, monthly, or yearly to achieve these goals. There are many Internet sites to assist you in determining this amount.



Step 4: Investment Decisions

See the list of investments for each category on page 127. Searching by name or visiting previous links will point you to lots of sites for potential investments. Be creative here. For example, explore *options* (a contract between a buyer and a seller that carries terms allowing an investor to lock in a predetermined purchase or sale price for a particular security) or *futures* (contracts to buy or sell an investment or asset at an agreed price with delivery on a specified date in the future).

Step 5: Portfolio Records and Monitoring

A search engine may suggest software or sites but here are a few sites to try.

Globe and Mail: www.globefund.com

Quicken: www.quicken.ca

Money Sense: www.moneysense.ca

Morningstar: www.morningstar.ca

The Motley Fool: www.fool.com

Option – Contracts between a buyer and a seller that carries terms allowing an investor to lock in a predetermined purchase or sale price for a particular security.

Future – Contracts to buy or sell an investment or asset at an agreed price with delivery on a specified date in the future.