Valuations:
Businesses, Securities, and Real Estate

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Course Description

This course covers valuations ranging from businesses, bonds, preferred stock and common stock to real estate. Business valuation is essentially a present value concept that involves estimating future cash flows of a business and discounting them at a required rate of return. The value of a bond is essentially the present value of all future interest and principal payments. Stock price may be expressed as a function of the expected future dividends and a rate of return required by investors. The Gordon's valuation model reflects this process. Real estate valuation involved several rule-of-thumb valuation methods.

Field of Study	Specialized Knowledge
Level of Knowledge	Overview
Prerequisite	Basic Accounting and Math
Advanced Preparation	None

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Chapter 1:

Corporate Valuations

Learning Objective

After completing this section, you should be able to:

1. Recognize the reasons for business valuations.
2. Identify various business valuation methods and the different variables used for valuation purposes.

There are many reasons for determining the value of a company. The reason for the valuation might be for the purchase or sale of the business, mergers and acquisitions, buy-back agreements, expanding the credit line, or tax matter (see Exhibit 1). The buying and selling of businesses is not the only reason for the demand for business valuations. Tough economic times result in increased litigation involving partner disputes and dissenting shareholder actions. Economies of scale encourage mergers and acquisitions to help maintain market share and ensure economic stability in a recessing economy.

For buying or selling a business, a valuation might be important for establishing an asking or offering price. But what is the value of the business? Is it the value of the company's assets? Is it the value of the company's earnings? Is it the value of the company's loyal customers and good reputation? Is it something else? The answer is that it might be any of the above, or all of the above. Further, you must consider the type of business and its major activities, industry conditions, competition, marketing requirements, management possibilities, risk factors, earning potential, and financial health of the business.

Usually, *value* is determined by an interested party. Although there is usually no single value (or "worth") that can be associated with a business in all situations, there is usually a defendable value that can be assigned to a business in most situations. To be a proficient valuation analyst a CFO requires analytical and writing skills. More specifically, one must be adept at financial analysis, economic forecasts, accounting and audit fundamentals, income taxes, and legal and economic research.

EXHIBIT 1
BUSINESS VALUATION OPPORTUNITIES

- Buy-sell agreements
- Mergers, acquisitions, and spinoffs
- Liquidation or reorganization of a business
- Initial public offering
- Minority shareholder interests
- Employee stock ownership plans
- Financing
- Return on investment analysis
- Government actions
- Allocation of acquisition price
- Adequacy of life insurance
- Litigation
- Divorce action
- Compensatory damage cases
- Insurance claims
- Estate and gift taxes
- Incentive stock options
- Charitable contributions

Source: National Association of Certified Valuation Analysts

The valuation process is an art and not a science because everyone's perception is slightly different. This chapter provides basic steps involved in valuation and various ways to determine what a business is worth. Further, various Internal Revenue Service Revenue Rulings are presented recommending specific valuation measures especially with regard to income tax issues.

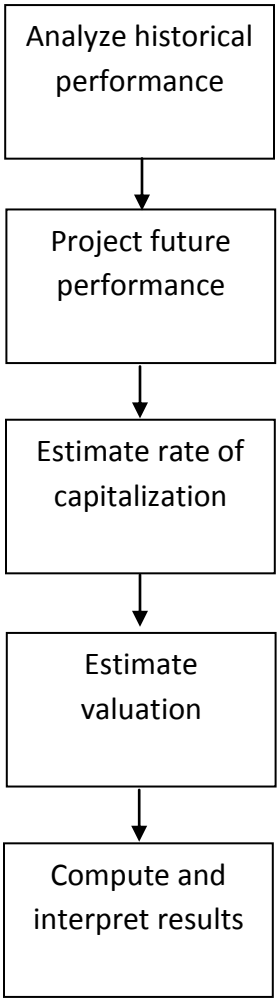
To determine a company's value, the purpose of the valuation and an appropriate perspective must be specified. The perspective might be that of a buyer, a seller, the IRS, or a court. When these are known, a business appraisal can be performed. Generally, the appraisal process determines the value of the business based on an asset, earnings (or cash flows), and/or market approach. In valuing the business, the following factors should be considered:

- History of the business
- Nature of the company
- Economic and political conditions
- Health of the industry
- Distribution channels and marketing factors
- Financial position
- Degree of risk
- Growth potential
- Trend and stability of earnings
- Competition
- Employee relationships
- Location
- Customer base
- Quality of management
- Ease of transferability of ownership

Steps in Valuation

Business valuations essentially involve the five steps. Exhibit 1 summarizes those steps. Each of these steps is discussed below.

EXHIBIT 1
STEPS IN A VALUATION



.Accumulate and analyze key financial information such as earnings and invested capital
.Develop an integrated historical perspective
.Analyze financial health

.Understand strategic position
.Develop performance scenarios
.Forecast financial statement line items
.Check overall forecast for reasonableness

.Develop target market value weights
.Estimate capitalization rate (cost of capital)

.Select proper valuation method
.Choose forecast horizon
.Discount future value to present

.Incorporate market and control discounts
.Compute and test results with major assumptions
.Interpret results within decision context

Step 1: Analyze Historical Performance

The first step in performing any valuation is accumulating and analyzing key financial information, which includes historical financial statements, projected financial statements, and tax returns. There must be a familiarity with the business, including the company's strategic position in the industry; and major assumptions of the valuation must be clearly spelled out. A variety of what-if scenarios must be investigated to reduce valuation errors.

Matching Value Definitions and Valuation Reasons

An initial step in the business valuation process is to match the reason and perspective of the valuation with an appropriate definition of value. Note that each definition of 'value" is not mutually exclusive. In a given situation, several definitions might concurrently apply. Exhibit 2 shows valuation reasons and value definitions that might be connected with them.

EXHIBIT 2
DEFINITION OF VALUE

Valuation Reason	*FMV*	*Liq. Value*	*Repl. Value*	*Going Concern Value*
Purchase of Business	x		x	x
Sale of Business	x			x
Shareholder Litigation	x			x
Bankruptcy, Dissolution		x		
Recapitalization	x			x

Individuals perceive the value of a business differently and thus disagree on how that value should be determined. As a result, the definition of value varies.

Fair Market Value

Fair market value is generally defined as the price at which property would change hands between a willing buyer and a willing seller, when neither is compelled to act and both have a reasonable knowledge of the relevant facts. With the asset approach, assets are valued at fair (i.e., appraised) market value.

Fair market value is often an important valuation definition in estate, gift, and other Federal tax related valuations. It is a well-accepted IRS and tax court concept. Generally, these groups will consider that a company's value is equivalent to its fair market value. Accordingly, a financial manager will need to consider this definition when performing valuations that may have the IRS as an interested party.

Replacement Value

Replacement value is the cost of replacing something. The use of the definition might be applicable for establishing 'damages" in antitrust suits, in condemnation proceedings, and in similar situations. At times, the definition could be used in a Federal or state court. In some situations, replacement value might be determined to be a company's fair market value.

Liquidation Value

The lowest value associated with a business is its liquidation value. Liquidation value is, in effect, the value of an item (a business) sold to the highest available bidder. Typically, the seller is compelled to sell and the buyer knows of the seller's need to sell. Liquidation value is a depressed value. For a business, assets might be sold piecemeal. Usually, liquidation value is defined as the amount received by the seller after selling and administrative expenses are paid. At times, a company's liquidation value could be its fair market value.

"Going Concern" Value

"Going concern" value is the opposite of liquidation value. Going concern value is the value of a business based on the presumption that the business will continue as an operating entity. That is, the company will not be liquidated. A company's going concern value will usually be its fair market value.

General Approaches to Business Valuation

When a company is not publicly traded, willing buyers and willing sellers capable of establishing an independent and objective value for a business won't exist at most times when the valuation is needed. Accordingly, an estimate of the price at which the company might change hands between a willing buyer and a willing seller must be made. To do this, one or more of three approaches to valuation might be used.

Market Comparison

Values of comparable companies in the industry may provide useful norms. The idea is to establish the company's value based on actual sales that are indicative of the company's current value.

A basic requirement for using prior sales of a firm's ownership interests in the appraisal of its current value is that each prior sale be indicative of the existing circumstances of the company. If prior sales were made in the too distant past, or were of a form or substance not indicative of the subject company's current situation, the use of the sale(s) may not be appropriate for establishing the company's current worth. In particular, small sales of non-controlling interests and sales between related parties might not indicate the value of the company and its related ownership interests at the time of the sale. They would not be indicative of the company's current value either.

When comparable company sales are evaluated, the requirements are greater. Comparable company sales should only be used when the sales have occurred in the recent past and are of a sufficient size to

appropriately establish a supportable value. They should be in the same industry. The companies should be similar in products and services offered, competitive positions, financial structures, and historical financial performance. Unfortunately, finding comparable companies is difficult because closely held company operating performance and sale information are frequently unavailable. *Note:* Refer to Sanders, John, *Biz-Comps Business Sale Statistics* published by BizComps (P.O. Box 711777, San Diego, CA 92171, **http://www.bizcomps.com/.** This is the annual report compiling information for 1,600 businesses in many industries.

Earnings (or Cash Flows)

A second approach for business valuations is based on earnings. The earnings approach considers a company's value to be equivalent to its ability to create income (or cash flow). The concept is to associate the firm's income with a rate of return commensurate with the company's investment risk.

Assets

A third approach for establishing the value of a business is to consider the company's value to be equivalent to the value of its net tangible assets. For the dissolution of the business, the company's value might be based on the liquidated value of the company's assets. If the company is to be "duplicated," the company's value might be based on asset replacement values. If the company will continue as a going concern, the company's value might be based on the fair market value of the company's assets.

Performing a General Analysis of the Company being Valued

For appraisal purposes, the determination of a company's value is usually based on a market, earnings, and/or assets approach to value. There are various business valuation methods associated with each. To understand and apply the methods, one needs to understand various attributes about the company being valued. Especially, an understanding is necessary of the company's:

- Industry
- Customers and markets
- Products and services
- Employees and management
- Assets, and
- Historical and projected financial performance.

Each of these areas will significantly affect the valuation of the business and the use of various valuation methods.

Step 2: Forecast Future Performance

Once you've analyzed the company's historical performance, you can move on to forecasting its future performance. The key to projecting performance is to develop a point of view on how the company can or will perform on the key value drivers: growth and return on investment. You should evaluate the company's strategic position, considering both the industry characteristics as well as the company's competitive advantages or disadvantages.

Industry Outlook

In assessing a company's industry, a CFO should evaluate the economic outlook for the industry, barriers to entry, government controls, and similar items. If the industry is expected to grow, firms in the industry might be perceived as being increasingly valuable. Further, you will need to consider competition. In a highly competitive industry, companies might be reduced in value because of competitive pressures, price discounting, etc.

Customers and Markets

In assessing a company's customers and markets, you should evaluate the company's key customers and the strength of the customers. If the company has many customers, and none of the customers represent a significant percentage of the sales of the company, the company might be increasingly stable. The company may have a lower associated investment risk. If a company has only a few large customers, you will need to weigh carefully the implications and the likelihood of its losing the customers.

Products and Services

In evaluating a company's products and services, you should look at their quality. You should compare the company's products and services with competitive products and services. Evaluate the company's investments in research and development and historical trends in sales and expenses of important products and services. Consider the number of products and services the company offers and the extent to which the company relies on one or several products or services for most of its sales and profits. When a company has only one or a few products or services, the competitive risks associated with the products and services become a factor. Generally, diverse and stable product lines might be associated with a stable company. Limited product lines might imply an increased investment risk.

Employees and Management

Qualified management usually means that the company is stable. Qualified management might enhance the value of the company. To the extent that a firm has had significant turnover in its management (and/or employees), the company might be considered a risky investment. In general, inexperienced management and a high turnover rate are indicative of a high-risk company.

Assets

Typically, the value of a company's tangible assets is a minimum value associated with the business. For valuation purposes, judge a company's assets to ensure that the assets are indeed valuable. Scrutinize in detail such items as obsolete inventory, old fixed assets, bad debts in accounts receivable, and capitalized expenses. For some assets, specific evaluations may be necessary.

Historical and Projected Financial Performance

Evaluating a company's historical and projected financial performance can be time consuming and complex. A CFO needs to establish the reliability of the company's historical financial statements and assess the implications of sales, expenses, and profits. Typically, for determining the value of a company, you evaluate the company's operating performance. Accordingly, you may have to remove the implications of non-typical and non-operating transactions included in the company's financial statements.

A company's historical financial statements might include excess compensation and significant perks to owners. Frequently, the CFO will need to add excess compensation paid to owners back to the company's income to fully understand the profitability of the company. Adjustments might also be made to the financial statements to convert cash basis statements to accrual basis statements. In particular, cash basis statements might not display accounts receivable, accounts payable, and accrued liabilities. In addition, adjustments may need to be made to the financial statements to convert cash basis statements to accrual basis statements, as cash basis statements might not display accounts receivable, accounts payable, and accrued liabilities."

In evaluating a company's financial performance, the CFO will want to review various expense ratios as a percent of sales and various sales, income, and expense trends. In particular, the CFO would assess the financial statements for purposes of making assumptions about the future profitability of the company. Evaluate various company ratios and compare them with other companies in the industry. You might also develop projected financial statements for the company for three or more years.

Step 3: Estimate the Rate of Capitalization Rate

Both creditors and shareholders expect to be compensated for the opportunity cost of investing their funds in one particular business instead of others with equivalent risk. The capitalization rate is used to calculate the time value of money, which, in turn, is used to convert expected future cash flow into present value for all investors. The capitalization rate (weighted-average cost of capital) is equal to the discount rate where no growth is assumed. Estimating the weighted cost of capital involves developing target market value weights and calculating the cost of each source of financing.

Step 4: Estimate Valuation

There are numerous ways of determining the value of a business and many possible combinations of methods. You should select a proper valuation method. Each of popular valuation methods is explained.

1. Adjusted Net Assets Method

The adjusted net assets valuation method presumes the value of a company is equivalent to the value of its net tangible assets. Asset values are often based on fair market values when the company is expected to continue as a going concern, liquidated values when the company is not expected to continue as a going concern, and replacement values when the costs of duplicating the company are being assessed.

The fair market value of the net tangible assets of the company may be based on independent appraisal. An addition is made for goodwill. An investment banking firm, who handles the purchase and sale of businesses, may be hired to appraise the tangible property. Usually, the fair market value of the assets exceeds their book value.

An advantage of the adjusted net assets valuation method is that it is frequently easy to determine the value of a company's tangible net assets. A disadvantage of the method is that it ignores the important implications of company earnings. In many instances, an adjusted net assets valuation is a conservative valuation. It might be a minimum value associated with a business.

EXAMPLE 1

Net Tangible Assets (at Fair Market Value)	$12,000,000
Plus Goodwill	6,000,000
Valuation	$18,000,000

2. Gross Revenue Multiplier Method

The value of the company may be determined based on the revenue generating capacity of the company. For example, many Internet stocks that lose money in the short run and yet have great future earnings potential tend to derive their value from their revenue generating capacity or registered member subscriptions. The formula for this method is as follows:

Value of the Business = Revenue x Gross Revenue Multiplier

The gross revenue multiplier used is the one customary in the industry. The industry norm gross multiplier is based on the average ratio of market price to sales typical in the industry.

Note: Business Week magazine of McGraw-Hill publishes every year a special weekly edition, *Corporate Scorecard*, containing average industry ratios.

If reported earnings are suspect, this method may also be advisable.

EXAMPLE 2

Gross revenue	$32,500,000
x Gross revenue multiplier	.4
Valuation	$13,000,000

3. Capitalization of Earnings Method

The capitalization of earnings valuation method is in many ways the opposite of the adjusted net assets valuation method. It uses income, as opposed to assets, to value the business. A variation of the method incorporates *cash flows* as opposed to earnings.

The capitalization of earnings valuation method is based on the notion that the investors will only acquire stock in a company if they can earn a rate of return that is high enough to offset the risks associated with the investment. The trade-off is the risk of the loss of the investment with the rate of return that might be realized. In general, high-risk companies need to yield high rates of return to stimulate equity investments. Low risk companies can produce lower rates of return and still attract equity investors.

The formula for the capitalization of earnings method follows:

Value of the Business = Earnings (or Cash Flow)/Capitalization Rate

Frequently, earnings or cash flow for this method is the current year's earnings (or cash flow), a simple average of two to five prior years, a weighted-average adjusted historical earnings, or the company's projected profit for the following year. The method presumes the earnings value used in the method is indicative of future earnings expectations on an ongoing basis. In this method, earnings can be any one of the following:

- Before-tax earnings
- After-tax earnings
- Earnings before interest and taxes (EBIT)

The capitalization rate is the rate of return an investor would expect to receive for investing in the company based on the company's perceived risk. It is typically a weighted cost of capital, weights being target mix of different sources of financing, equity or nonequity.

Two examples for this method are presented below.

EXAMPLE 3

Earnings (Simple Average)	$1,250,000

/Capitalization rate	10%
Valuation	$12,500,000

The following example uses weighted-average historical earnings, in which more weight is given to the most recent years. This is more representative than a simple average. Weighted-average makes sense because current earnings reflect current prices and recent business activity. In the case of a five-year weighted average, the current year is assigned a weight of 5 while the initial year is assigned a weight of 1. The multiplier is then applied to the weighted-average five-year adjusted historical earnings to derive a valuation.

EXAMPLE 4

Year	*Historical Earnings*	*Weight*	*Total*
20x4	$ 2,780,000	5	$ 13,900,000
20x3	$ 1,670,000	4	$ 6,680,000
20x2	$ 1,350,000	3	$ 4,050,000
20x1	$ 1,780,000	2	$ 3,560,000
20x0	$ 2,100,000	1	$ 2,100,000
		15	$ 30,290,000
Weighted average 5 year earnings:			
$30,290,000/15 = $2,019,333			
Weighted average 5 year earnings			$ 2,019,333
/Capitalization Rate (20%)			/20%
Valuation			$ 10,096,667

4. Price-Earnings Ratio Method

For publicly traded stocks, stock trading prices are often directly proportional to earnings. Often, within industries, there is a consistency between companies. The price-earnings ratio method is predicated on the notion that price-earnings ratios (P/Es) of publicly traded stocks might be indicative of a closely held company's value. The notion is this: if the closely held company were publicly traded, it would trade at a price similar to the price at which comparable companies trade.

The formula for this method is as follows:

Value of the Business = Earnings per share (EPS) x Price-Earnings Multiplier (P/E)

Typically, earnings for this method is the most recent year's earnings per share (EPS) or an average of two to five prior years. The P/E multiplier is usually an historical average based on comparable, actively traded stocks. Some use a P/E ratio based on the most current period rather than an average of prior years.

EXAMPLE 5

Earnings after taxes	$1,000,000
Outstanding shares	250,000
Earnings per share (EPS)	$4
P/E ratio	15
Estimated market price per share	$60
x Number of shares outstanding	250,000
Valuation	$15,000,000

5. Dividend Payout (or Dividend Paying Capacity) Method

The dividend payout (or dividend paying capacity) valuation method presumes that the "compensation" for stock ownership is dividends. The method is based on the notion that a stock's value is related to the company's ability to pay dividends and the yield investors expect.

The dividend payout method involves the following steps:

1. Company's Dividend Paying Capacity = Earnings x Dividend Payout Percentage
2. Value of Business = Company's Dividend Paying Capacity/Dividend Yield Rate

Typically, earnings for this method is an average of two to five prior years. Some use before-tax profits. Others use after-tax profits. The dividend payout percentage and dividend yield rate are established with reference to comparable, publicly traded stocks. A variation of the method would establish the company's dividend paying capacity to be monies received by the owners of the closely held company as dividends, excess compensation, and perks.

Although the method is in infrequent use, the method incorporates some of the most defendable valuation principles of all methods.

EXAMPLE 6

Earnings after taxes	$1,000,000
Dividend payout percentage	40%
Dividend paying capacity	$400,000
/Dividend Yield Rate	4%
Valuation	$10,000,000

6. Excess Earnings Return on Assets Method

The excess earnings return on assets valuation method implies that within an industry, a given level of company assets will generate a particular level of earnings. To the extent a company has earnings above the expected level of earnings, the company is presumed to have an enhanced value. The enhanced value is attributed to goodwill (or intangible assets) . The addition of the value of the goodwill and the fair market value of the net tangible assets equals the total valuation.

The excess earnings return on assets method involves the following steps:

1. Industry Expected Earnings = Company Assets x Industry Expected Return on Assets
2. Excess Earnings = Company Earnings - Industry Expected Earnings
3. Goodwill (intangible assets) = Excess Earnings/Capitalization Rate
4. Value of the Business = Goodwill + Fair Market Value of Net Tangible Assets

EXAMPLE 7

Year	*Net Tangible Assets*	*Weight*	*Total*
20x0	$ 10,000,000	1	$ 10,000,000
20x1	$ 14,000,000	2	$ 28,000,000
20x2	$ 18,000,000	3	$ 54,000,000
20x3	$ 19,000,000	4	$ 76,000,000
20x4	$ 18,500,000	5	$ 92,500,000
		15	$ 260,500,000
Weighted Average Net Tangible Assets			
$260,500,000/15 =$17,366,667			
Weighted Average Earnings (5 years) ---Assumed			$ 1,800,000
Minus Industry Rate of Return on Weighted-Average			
Net Tangible Assets ($17,366,667x 10%)			1,736,667
Excess Earnings			$ 63,333
/Capitalization Factor (20%)			/0.2
Plus Goodwill (Intangibles)			$ 316,667
Plus Fair Market Value of Net Tangible Assets			$ 16,000,000
Valuation			$ 16,316,667

7. Excess Earnings Return on Sales Method

The excess earnings return on sales valuation method values a company based on sales, earnings, and assets. Generally, the method implies that within an industry, a given level of sales will generate a given level of earnings. When a company has earnings above the industry's expected level of earnings, the company is considered to have goodwill (or intangible assets). The value of goodwill plus the fair market value of the net tangible assets is considered to be the value of the company.

The excess earnings return on sales method involves the following steps:

1. Industry Expected Earnings = Company Sales x Industry Expected Return on Sales
2. Excess Earnings = Company Earnings - Industry Expected Earnings
3. Goodwill (Intangible Assets) = Excess Earnings/Capitalization Rate
4. Value of the Business = Goodwill + Fair Market Value of Net Tangible Assets

Variations in this method include the use of the Company's current year's sales or a two to five year average for computing the industry expected profits.

EXAMPLE 8

Year	*Sales*	*Weight*	*Total*
20x0	$ 11,100,000	1	$ 11,100,000
20x1	$ 12,500,000	2	$ 25,000,000
20x2	$ 20,000,000	3	$ 60,000,000
20x3	$ 21,000,000	4	$ 84,000,000
20x4	$ 24,200,000	5	$ 121,000,000
		15	$ 301,100,000
Weighted Average Sales			
$301,100,000/15 =$20,073,333			
Weighted Average Earnings (5 years) ---Assumed			$ 1,800,000
Minus Industry Rate of Return on Weighted-Average			
Sales ($20,073,333 x 4%)			802,933
Excess Earnings			$ 997,067
/Capitalization Factor (20%)			/0.2
Valuation of Goodwill (Intangibles)			$ 4,985,333
Plus Fair Market Value of Net Tangible Assets			$ 16,000,000
Valuation			$ 20,985,333

8. Discounted Cash Flow Method

The discounted cash flow (DCF) method equates the value of a business with the cash flows the business is expected to create.

The discounted cash flow method presumes that the purpose of a company is to generate cash flow (or earnings) and therefore, assets, distribution channels, etc., have a value related to the cash flows they are able to create. Conceptually, the method is similar to the capitalization of earnings valuation method except that in the discounted cash flow method *projected* earnings (or cash flows) as opposed to historical earnings (or cash flows) are assessed. If the growth rate is used to project future earnings, the rate may be based on prior growth rate, future expectations, and the inflation rate. The discount rate may be based on the market interest rate of a low risk asset investment. *Note:* The discount rate

ordinarily used in present value calculations is the minimum required rate of return (the cost of capital) set by the firm.

The formula for the discounted cash flow method follows:

Value of the Business = Present Value of the Earnings (or Cash Flow) Projection
+ Present Value of Terminal Value (Selling Price)

Typically, cash flows are projected for at least five years and a terminal value (or selling price) is established for the value of the business at the end of the term.

EXAMPLE 9

Year	*Cash Flows (7% growth rate)*	*Present Value (PV) Factor at a 10% discount rate**	*Total PV*
20x0	$ 500,000	0.909	$ 454,500
20x1	$ 535,000	0.826	$ 441,910
20x2	$ 572,450	0.751	$ 429,910
20x3	$ 612,522	0.683	$ 418,352
20x4	$ 655,398	0.621	$ 407,002
Present Value of Future Earnings			$ 2,151,674
If the anticipated selling price at the end of year 20x4 is $18,000,000, the valuation of the business equals:			
Present value of future earnings			$ 2,151,674
Present value of selling price $18,000,000 x .621			$ 11,178,000
Valuation			$ 13,329,674

*From Table 1.

Abnormal Earnings Approach The abnormal earnings approach is used when value is driven not by the level of earnings but by the level of earnings *relative to some benchmark* (i.e., the cost of capital or a minimum required rate of return). The rationale is that investors are willing to pay a premium for companies that earn more than the cost of capital, implying companies that produce *positive abnormal earnings*. The formula is

Value of the business = Book value of assets + Present value of expected future abnormal earnings

(Actual earnings - Required earnings)

For example, if a firm's book value of assets at the beginning of the year is $100 per share and the cost of capital is 13%, investors would require earnings of at least $13 per share ($100 x 13%). If the market

expects the company to report earnings equal to benchmark earnings, but if it exceeds the benchmark by earning $23 per share for the year, the value of the company (i.e., its stock price) increases to reflect the company's superior performance.

Using a Computer to Help

Besides manual calculations using present value tables, present value calculations also can be done using:

(a) Financial calculators

(b) Spreadsheet software such as *Excel*.

Note: Depending on the method you use, rounding errors in answers are unavoidable.

9. Combining Valuation Methods

Combining valuation methods establishes a more reasonable value for a business than any single method. In particular, earnings, assets, comparable companies, prior sales of company stock, and other important valuation concepts can be accounted for using this method.

In addition, the valuation of a company may be estimated based on the weighted-average value of several methods. The earnings method typically should hold the most weight, while asset-type valuation methods should carry the least weight. An example follows.

EXAMPLE 10

Method	*Valuation Amount*	*Weight*	*Total*
Adjusted Net Assets	$ 18,000,000	1	$ 18,000,000
Excess Earnings on Rate of Return	$ 20,985,333	2	$ 41,970,666
		3	$ 59,970,666
Total/3 = $59,970,666/3= $19,990,222			
Valuation			$ 19,990,222

Generally, before a combination method should be used, it should be established that the combination method results in a better valuation than any method individually, and that the use of each method in the combination supports the final valuation.

Earnings Surprises

Many valuation methods require estimates of future earnings. But estimates can (and usually do) prove to be off targets. When this transpires, an "earnings surprise" results. For example, a *positiv*e earnings surprise--i.e., reported earnings exceeding market expectations--tend to have a upward rift in stock

value. Earnings estimates are reported by companies*, Zacks (*/www.zacks.com), Thomson Reuters's *First Call* (http://thomsonreuters.com/products_services/financial/financial_products/a-z/first_call/*)*, and *IBES* (http://thomsonreuters.com/products_services/financial/financial_products/a-z/ibes/ , which are the leading trackers of analysis' earnings projections. These firms constantly polls brokerages for their earnings estimates. From that survey, these companies publish a compilation that includes the high, low, and mean prediction for a company's upcoming quarterly and fiscal year results.

Step 5: Compute and Interpret Results

The final phase of the valuation process involves calculating and testing the company's value, then interpreting the results in terms of the decision context involved. This phase includes incorporating market and control discounts.

Marketability Discounts

Generally, a business ownership interest that can be sold quickly will be worth more than a similar ownership interest that cannot be sold quickly. In various business valuation methods, this implication may or may not be considered. When it is not, a marketability discount might be associated with the value of the ownership interest otherwise determined. A marketability discount is the reduction in the value of a company (or ownership interest) because the company (or ownership interest) might take considerable time to sell.

There are differences of opinion about marketability discounts. The IRS objects to them and will argue that the implications of marketability will have been accounted for elsewhere in the valuation process. Many believe that statistics prove there is in fact a depressed value for closely held company ownership interests, and they might assign discounts as high as 25% to 45% to account for this.

In assigning a marketability discount, some analysts compute the cost of taking the company public and deduct the amount from the value of the company otherwise determined. The presumption is that if the company is taken public, its ownership interests will be marketable.

Control Premiums and Discounts

A business valuation does not have to be restricted to the valuation of an entire company. Frequently, partial ownership interests are valued for purchase or sale, divorce proceedings, estate planning, and other reasons.

When a partial ownership interest is appraised, it is not necessarily true that its value is equivalent to its ownership percentage times the value of the company. Generally, to the extent the ownership interest can control the activities of the business, the ownership interest may have an enhanced value. To the extent the ownership interest has little control over the operations of the company, the ownership

interest might have a reduced value. Practitioners frequently account for this with control premiums and lack of control discounts.

For closely held companies, noncontrolling ownership interests can have a depressed value. The company might not be particularly marketable, and the noncontrolling interests might have an even greater lack of appeal because of their inability to influence the payment of dividends and the general operations of the company.

In developing control premiums and lack of control discounts, the circumstances of the ownership interests must be considered. Before a discount or premium is assigned, it should be determined that in fact an ownership interest has an increased or decreased value based on control/lack of control implications. For example, in a company where the father is the controlling owner and two children are the noncontrolling owners, circumstances might indicate that the noncontrolling owners are in fact receiving dividends, etc., commensurate with the value of their ownership percentages. Accordingly, depending on the purpose of the valuation, the assignment of a discount to the non-controlling interests might not be appropriate. Before assigning premiums or discounts, it is very important to ensure that the control/lack of control implications were not accounted for in some other way in the valuation process.

Summary

Performing a business valuation is not a simple task. Although a business valuation might seem overwhelming at first, valuation concepts are in fact very logical and intuitive. The major issue is to clearly understand the concepts of valuation and how the concepts are used by the interested party. The next step is to fully investigate the company being valued, its industry, and various implications that might affect its value. Financial forecasting, analytical reviews, sales forecasting, financial analysis, and various planning activities are an important part of the business valuation process.

Revenue Ruling 59 - 60

IRS Revenue Ruling 59-60, promulgated in 1959, addressed a desire by the IRS to set forth fundamental issues appraisers should consider when valuing a privately-owned business for estate and gift tax purposes. Revenue Ruling 59-60 is not a "how to"; rather it is an excellent discussion of eight broad factors the appraiser should take into account to reach a value conclusion. The Ruling is presented below.

In valuing the stock of closely held corporations, or the stock of corporations where market quotations are not available, all other available financial data, as well as all relevant factors affecting the fair market value must be considered for estate tax and gift tax purposes. No general formula may be given that is applicable to the many different valuation situations arising in the valuation of such stock. However, the general approach, methods, and factors which must be considered in valuing such securities are outlined.

Section 1. Purpose

The purpose of this Revenue Ruling is to outline and review the approach, methods and factors to be considered in valuing shares of the capital stock of closely held corporations for estate tax and gift tax purposes. The methods discussed herein will apply likewise to the valuation of corporate stocks on which market quotations are either unavailable or are of such scarcity that they do not reflect the fair market value.

Section 2. Background and Definitions

01. All valuations must be made in accordance with the applicable provisions of the Internal Revenue Code of 1954 and the Federal Estate Tax & Gift Tax Regulations. Sections 2031(a), 2032 and 2512(a) of the 1954 Code (Sections 811 and 1005 of the 1939 Code) require that the property to be included in the gross estate, or made the subject of a gift, shall be taxed on the basis of the value of the property at the time of death of the decedent, the alternative date if so elected, or the date of gift.

02. Section 20.2031-1(b) of the Estate Tax Regulations (Section 81.10 of the Estate Tax Regulations 105) and Section 25.2512-1 of the Gift Tax Regulations (Section 86.19 of Gift Tax Regulations 108) define fair market value, in effect, as the price at which the property would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts. Court decisions frequently state in addition that the hypothetical buyer and seller are assumed to be able, as well as willing, to trade and to be well informed about the market for the property.

03. Closely held corporations are those company shares owned by a relatively limited number of stockholders. Often the entire stock issue is held by one family. The result of this situation is that little, if any, trading in the shares takes place. There is, therefore, no established market for the stock and such sales as occur at irregular intervals seldom reflect all of the elements of a representative transaction as defined by the term “fair market value.”

Section 3. Approach to Valuation

01. A determination of fair market value, being a question of fact, will depend upon the circumstances in each case. No formula can be devised that will be generally applicable to the multitude of different valuation issues arising in estate and gift tax cases. Often, an appraiser will find wide differences of opinion as to the fair market value of a particular stock. In resolving such differences, he or she should maintain a reasonable attitude in recognition of the fact that valuation is not an exact science. A sound valuation will be based upon all the relevant facts, but the elements of common sense,

informed judgment, and reasonableness must enter into the process of weighing those facts and determining their aggregate significance.

02. The fair market value of specific shares of stock will vary as general economic conditions change from “normal" to "boom” or “depression," that is, according to the degree of optimism or pessimism with which the investing public regards the future at the required date of appraisal. Uncertainty as to the stability or continuity of the future income from a property decreases its value by increasing the risk of loss of earnings and value in the future. The value of shares of stock of a company with very uncertain future prospects is highly speculative. The appraiser must exercise his judgment as to the degree of risk attaching to the business of the corporation which issued the stock, but that judgment must be related to all of the other factors affecting value.

03. Valuation of securities is, in essence, a prophecy as to the future and must be based on facts available at the required date of appraisal. As a generalization, the prices of stocks which are traded in volume in a free and active market by informed people’s best reflect the consensus of the investing public as to what the future holds for the corporations and industries represented. When a stock is closely held, is traded infrequently, or is traded in an erratic market, some other measure of value must be used. In many instances, the next best measure may be found in the prices at which the stocks of companies engaged in the same or a similar line of business are selling in a free and open market.

Section 4. **Factors to Consider**

01. It is advisable to emphasize that in the valuation of the stock of closely held corporations or the stock of corporations where market quotations are either lacking or too scarce to be recognized, all available financial data, as well as all relevant factors affecting the fair market value, should be considered. The following factors, although not all inclusive are fundamental and require careful analysis in each case:

(a) Nature of the business and the history of the enterprise from its inception.
(b) Economic outlook in general and the condition and outlook of the specific industry in particular.
(c) Book value of the stock and the financial condition of the business.
(d) Earning capacity.
(e) Dividend-paying capacity.
(f) Whether or not the enterprise has goodwill or other intangible value.
(g) Sales of the stock and the size of the block of stock to be valued.
(h) Market price of stocks of corporations engaged in the same or a similar line of business having their stocks actively traded in a free and open market, either on an exchange or over-the-counter.

02. The following is a brief discussion of each of the foregoing factors.

(a) The history of a corporate enterprise will show its past stability or instability, its growth or lack of growth, the diversity or lack of diversity of its operations, and other facts to form an opinion of the degree of business risk. For an enterprise which changed its form of organization but carried on the same or closely similar operations of its predecessor, the history of the former enterprise should be considered. The detail considered should increase with the date of appraisal, since recent events are of greatest help in predicting the future, but a study of gross and net income, and of dividends covering a long prior period, is highly desirable. The history to be studied should include, but need not be limited to, the nature of the business, its products or services, its operating and investment assets, capital structure, plant facilities, sales records and management, all of which should be considered as of the date of the appraisal, with due regard for recent significant changes. Events of the past that are unlikely to recur in the future should be discounted, since value has a close relation to future expectancy.

(b) A sound appraisal of a closely held stock must consider current and prospective economic conditions as of the date of appraisal, both in the national economy and in the industry or industries with which the corporation is allied. It is important to know that the company is more or less successful than its competitors in the same industry, or that it is maintaining a stable position with respect to competitors. Equal or even greater significance may attach to the ability of the industry with which the company is allied to compete with other industries. Prospective competition which has not been a factor in prior years should be given careful attention. For example, high profits due to the novelty of its product and the lack of competition often lead to increasing competition. The public's appraisal of the future prospects of competitive industries or of competitors within an industry may be indicated by price trends in the markets for commodities and for securities. The loss of the manager of a so-called 'one-man' business may have a depressing effect upon the value of the stock of such business, particularly if there is a lack of trained personnel capable of succeeding to the management of the enterprise. In valuing the stock of this type of business, therefore, the effect of the loss of the manager on the future expectancy of the business, and the absence of management-succession potentialities are pertinent factors to be taken into consideration. On the other hand, there may be factors which offset, in whole or in part, the loss of the manager's services. For instance, the nature of the business and of its assets may be such that, they will not be impaired by the loss of the manager. Furthermore, the loss may be adequately covered by life insurance, or competent management might be employed on the basis of the consideration paid for the former manager's services. These, or other offsetting factors, if found to exist, should be carefully weighed against the loss of the manager's services in valuing the stock of the enterprise.

(c) Balance sheets should be obtained, preferably in the form of comparative annual statements for two or more years immediately preceding the date of appraisal, together with a balance sheet at the end of the month preceding that date, if corporate accounting will permit. Any balance sheet descriptions that are not self-explanatory, and balance sheet items comprehending diverse assets or liabilities, should be clarified in essential detail by supporting supplemental schedules. These statements usually will disclose to the appraiser:

- Liquid position (ratio of current assets to current liabilities);
- Gross and net book value of principal classes of fixed assets;

- Working capital;
- Long-term indebtedness;
- Capital structure;
- Net worth.

Consideration should be given to any assets not essential to the operation of the business, such as investments in securities, real estate, etc. In general, such nonoperating assets will command a lower rate of return than do the operating assets, although in exceptional cases the reverse may be true. In computing the book value per share of stock, assets of the investment type should be revalued on the basis of their market price and the book value adjusted accordingly. Comparison of the company's balance sheets over several years may reveal, among other facts, such developments as the acquisition of additional production facilities or subsidiary companies, improvement in financial position, and details as to recapitalizations and other changes. in the capital structure of the corporation. If the corporation has more than one class of stock outstanding, the charter or certificate of incorporation should be examined to ascertain the explicit rights and privileges of the various stock issues including:

- Voting powers
- Preference as to dividends
- Preference as to assets in the event of liquidation

(d) Detailed profit-and-loss statements should be obtained and considered for a representative period immediately prior to the required date of appraisal, preferably five or more years.

Such statements should show:

- Gross income by principal items;
- Principal deductions from gross income including major prior items of operating expenses, interest and other expense on each item of long-term debt, depreciation and depletion if such deductions are made, officers' salaries, in total if they appear to be reasonable or in detail if they seem to be excessive, contributions (whether or not deductible for tax purposes) that the nature of its business and its community position require the corporation to make, and taxes by principal items, including income and excess profits taxes;
- Net income available for dividends;
- Rates and amounts of dividends paid on each class of stock,
- Remaining amount carried to surplus; and
- Adjustments to, and reconciliation with, surplus as stated on the balance sheet. With profit and loss statements of this character available, the appraiser should be able to separate recurrent from nonrecurrent items of income and expense, to distinguish between operating income and investment income, and to ascertain whether or not any line of business in which the company is engaged is operated consistently at a loss and might be abandoned with benefit to the company. The percentage of earnings retained for business expansion should be noted when dividend paying capacity is considered. Potential future income is a major factor in many valuations of closely-held stocks, and all information concerning past income which will be

helpful in predicting the future should be secured. Prior earnings records usually are the most reliable guide as to the future expectancy, but resort to arbitrary five-or-ten-year averages without regard to current trends or future prospects will not produce a realistic valuation. If, for instance, a record of progressively increasing or decreasing net income is found, then greater weight may be accorded the most recent years' profits in estimating earning power. It will be helpful, in judging risk and the extent to which a business is a marginal operator, to consider deductions from income and net income in terms of percentage of sales. Major categories of cost and expense to be so analyzed include the consumption of raw materials and supplies in the case of manufacturers, processors and fabricators; the cost of purchased merchandise in the case of merchants; utility services; insurance; taxes; depletion or depreciation; and interest.

(e) Primary consideration should be given to the dividend-paying capacity of the company rather than to dividends actually paid in the past. Recognition must be given to the necessity of retaining a reasonable portion of profits in a company to meet competition. Dividend-paying capacity is a factor that must be considered in an appraisal, but dividends actually paid in the past may not have any relation to dividend paying capacity. Specifically, the dividends paid by a closely held family company may be measured by the income needs of the stockholders or by their desire to avoid taxes on dividend receipts, instead of by the ability of the company to pay dividends. Where an actual or effective controlling interest in a corporation is to be valued, the dividend factor is not a material element, since the payment of such dividends is discretionary with the controlling stockholders. The individual or group in control can substitute salaries and bonuses for dividends, thus reducing net income and understating the dividend-paying capacity of the company. It follows, therefore, that dividends are a less reliable criteria of fair market value than other applicable factors.

(f) In the final analysis, goodwill is based upon earning capacity. The presence of goodwill and its value, therefore, rests upon the excess of net earnings over and above a fair return on the net, tangible assets. While the element of goodwill may be based primarily on earnings, such factors as the prestige and renown of the business, the ownership of a trade or brand name, and a record of successful operation over a prolonged period in a particular locality, also may furnish support for the inclusion of intangible value. In some instances, it may not be possible to make a separate appraisal of the tangible and intangible assets of the business. The enterprise has a value as an entity. Whatever intangible value there is, which is supportable by the facts, may be measured by the amount by which the appraised value of the tangible assets exceeds the net book value of such assets.

(g) Sales of stock of a closely held corporation should be carefully investigated to determine whether they represent transactions at arm's length. Forced or distress sales do not ordinarily reflect fair market value nor do isolated sales in small amounts necessarily control as the measure of value. This is especially true in the valuation of a controlling interest in a corporation. Since, in the case of closely held stocks, no prevailing market prices are available, there is no basis for making an adjustment for blockage. It follows, therefore, that such stocks should be valued upon a consideration of all the evidence affecting fair market value. Although it is true that a minority interest in an unlisted corporation's stock is more difficult to sell than a similar block of listed stock, it is equally true that

control of a corporation, either actual or in effect, representing as it does an added element of value, may justify a higher value for a specific block of stock.

(h) Section 2031(b) of the Code states, in effect, that in valuing unlisted securities the value of stock or securities of corporations engaged in the same or a similar line of business which are listed on an exchange should be taken into consideration along with all other factors. An important consideration is that the corporations to be used for comparisons have capital stocks which are actively traded by the public. In accordance with Section 2031(b) of the Code, stocks listed on an exchange are to be considered first. However, if sufficient comparable companies whose stocks are listed on an exchange cannot be found, other comparable companies which have stocks actively traded on the over-the-counter market also may be used. The essential factor is that whether the stocks are sold on an exchange or over-the-counter there is evidence of an active, free public market for the stock as of the valuation date. In selecting corporations for comparative purposes, care should be taken to use only comparable companies (corporations specified in the statute have similar lines of business). However, consideration must be given to other relevant factors in order that the most valid comparison possible be obtained. For example, a corporation having one or more issues of preferred stock, bonds or debentures in addition to its common stock should not be considered to be directly comparable to one having only common stock outstanding. In like manner, a company with a declining business and decreasing markets is not comparable to one with a record of current progress and market expansion.

Section 5. Weight to Be Accorded Various Factors

The valuation of closely held corporate stock entails the consideration of all relevant factors as stated in Section 4. Depending upon the circumstances in each case, certain factors may carry more weight than others because of the nature of the company's business. To illustrate:

- Earnings may be the most important criterion of value in some cases whereas asset value will receive primary consideration in others. In general, the appraiser will accord primary consideration to earnings when valuing stocks of companies which sell products or services to the public; conversely, in the investment or holding type of company, the appraiser may accord the greater weight to the assets underlying the security to be valued.
- The value of the stock of a closely held investment or real estate holding company, whether or not family owned, is closely related to the value of the assets underlying the stock. For companies of this type the appraiser should determine the fair market values of the assets of the company. Operating expenses of such a company and the cost of liquidating it, if any, merit consideration when appraising the relative values of the stock and the underlying assets. The market values of the underlying assets give due weight to potential earnings and dividends of the particular items of property underlying the stock, capitalized at rates deemed proper by the investing public at the date of appraisal. A current appraisal by the investing public should be superior to the retrospective opinion of an individual. For these reasons, adjusted net worth should be accorded greater weight in valuing the stock of a closely held investment or real estate holding company, whether or not family owned, than any of the other customary yardsticks of appraisal, such as earnings and dividend paying capacity.

Section 6. Capitalization Rates

In the application of certain fundamental valuation factors, such as earnings and dividends, it is necessary to capitalize the average or current, results at some appropriate rate. A determination of the proper capitalization rate presents one of the most difficult problems in valuation. That there is no ready or simple solution will become apparent by a cursory check of the rates of return and dividend yields in terms of the selling prices of corporate shares listed on the major exchanges of the country. Wide variations will be found even for companies in the same industry. Moreover, the ratio will fluctuate from year to year depending upon economic conditions. Thus, no standard tables of capitalization rates applicable to closely held corporations can be formulated. Among the more important factors to be taken into consideration in deciding upon a capitalization rate in a particular case are:

- Nature of the business
- Risk
- Stability or irregularity of earnings.

Section 7. Average Of Factors

Because valuations cannot be made on the basis of a prescribed formula, there is no means whereby the various applicable factors in a particular case can be assigned mathematical weights in deriving the fair market value. For this reason, no useful purpose is served by taking an average of several factors (for example, book value, capitalized earnings, and capitalized dividends) and basing the valuation on the result. Such a process excludes active consideration of other pertinent factors, and the end result cannot be supported by a realistic application of the significant facts in the case except by mere chance.

Section 8. Restrictive Agreements

Frequently, in the valuation of closely held stock for estate and gift tax purposes, it will be found that the stock is subject to an agreement restricting its sale or transfer. Where shares of stock were acquired by a decedent subject to an option reserved by the issuing corporation to repurchase at a certain price, the option price is usually accepted as the fair market value for estate tax purposes. See Rev. Rule. 54-76 C.B. 1954-1, 194. However, in such a case the option price is not determinative of fair market value for gift tax purposes. Where the option, or buy and sell agreement, is the result of voluntary action by the stockholders and is binding during the life as well as at the death of the stockholders, such agreement may or may not, depending upon the circumstances of each case, fix the value for estate tax purposes. However, such agreement is a factor to be considered, with other relevant factors, in determining fair market value. Where the stockholder is free to dispose of shares during life and the option is to become effective only upon death, the fair market value is not limited to the option price. It is always necessary to consider the relationship of the parties, the relative number of shares held by the decedent, and other material facts, to determine whether the agreement represents a bona fide business arrangement or is a device to pass the decedent's shares to the natural objects of his bounty for less than an adequate and full consideration in money or money's worth. In this connection see Rev. Rul. 157 C.B. 1953-2, 255, and Rev. Rul. 189, C.B. 1953-2, 294.

Section 9. Effect on Other Documents

Revenue Ruling 54-77, C.B. 1954-1, 187, is hereby superseded.

How to Market Valuation Services

1. Display openly your association affiliation and accreditation.
2. Get yourself published, either through your various association affiliations, or in accounting journals and local publications.
3. Build relationships with local attorneys and other CPAs. Attorneys and CPAs are the primary source for valuation work.
4. Convince your financial planner why proper valuations are essential in preparing a meaningful financial plan.
5. Let the courts in your county know of your expertise and availability.
6. Present local seminars to attorneys, CPAs, financial planners, bankers and business owners on the applications, complexities, and uses of a business valuation.
7. Encourage your tax and accounting clients to get a valuation for:
   - Estate planning
   - Buy/Sell arrangements
   - As a measurement of management's performance
   - Use in obtaining business credit lines and loans

Source: National Association of Certified Valuation Analysts

Additional Readings

1. Copeland, T., T. Koller, and J. Murrin, *Valuation: Measuring and Managing the Value of Companies* (New York: Wiley, 1994).

2. Palepu, K., V. Bernard, and P. Healy, *Business Analysis and Valuation* (Cincinnati, OH: South-Western Publishing, 1996).

3. Sanders, John, *Biz-Comps Business Sale Statistics* (San Diego, CA: BizComps, **www.bizcomps.com)**

4. Yegge, Wilber, *Basic Guide for Buying and Selling a Company*, John Wiley & Sons, ISBN 0471149438.

5. Yegge, Wilber, *Basic Guide for Valuing a Company*, John Wiley & Sons, 2005.

Chapter 1 Review Questions

1. The only reason for demand for business evaluation is buying or selling a business. True or False?

2. The reasons for business valuation include shareholder litigation and divorce action. True or False?

3. No single value can be assigned to the worth of a business. True or False?

4. To be a proficient valuation analyst a CFO needs to know what litigation is involved in the process. True or False?

5. In valuing a business the following factor that is NOT considered is

A. History of the business.
B. The leverage.
C. Financial position.
D. Growth potential.

6. To reduce valuation errors a variety of

A. “What if” scenarios must be investigated.
B. Liquidation value must be determined.
C. An income approach to value scenarios must be considered.
D. None of the above.

7. The price at which property would change hands between a willing buyer and a willing seller is called

A. Fair market value.
B. Replacement Value.
C. “Going concern” value.
D. Liquidation value.

8. The replacement value is

A. The fair market price.
B. Lowest value associated with business.
C. Value of a business based on the presumption that the business will continue as an operating entity.
D. Cost of replacing something.

9. Going concern value is synonymous with the replacement value. True or False?

10. An approach to valuation that is based on values of comparable companies in the industry and may establish the companies value based on actual sales that are indicative of the company's current value which is

A. Future earnings (or cash flow).
B. Market comparison.
C. Assets.
D. Industrial outlook.

11. A business evaluation method that presumes the value of a company is equivalent to the value of its net tangible assets is

A. Capitalization of earnings method.
B. Excess earnings return on assets method.
C. Adjusted net assets method.
D. Discount cash flow method.

12. There are many ways to determine the value of a business. One of the popular methods that determines the value of a business based on the revenue generating capacity of the company is

A. Adjusted net assets method.
B. Capitalization of earnings method.
C. Gross revenue multiplier method.
D. Price-earnings ratio method.

13. Using the Gross Revenue Multiplier Method: Where value of the business = Revenue x Gross Revenue Multiplier: Gross revenue is $32,500,000 and Gross Revenue Multiplier is .4, the valuation is

A. $15,000,000.
B. $13,000,000.
C. $32,000,000.
D. $32,500,000.

14. The value of the business equals present earnings (or cash flow) generated by the business. True or False?

15. When a stock is closely held, is traded infrequently, or is traded in an erratic market, conventional valuation models do not work. True or False?

Chapter 2:

Security and Real Estate Valuation

Learning Objective

After completing this section, you should be able to:

1. Recognize the valuation methods used for financial securities.
2. Identify the determinants of the price-earnings ratio and the definition of beta values.
3. Recognize other pragmatic valuation approaches and valuation methods for an income producing property.

Valuation is the process of determining the worth (or value) of an asset. Just like a company's investors, the company's financial managers must have a good understanding of how to value its stocks, bonds, and other securities to judge whether or not they are a "good buy." The failure to understand the concepts and computational procedures in valuing a security may preclude sound financial decisions. This fact is evident in the company's objective of maximizing the value of its common stock. We will use the concept of the time value of money to analyze the fundamental values of bonds and stocks. Basic bond valuation and stock valuation models under varying assumptions are discussed. In all cases, bond and stock values are found to be the present value of the future cash flows expected from the security.

In this chapter, you will learn:

- The key inputs and concepts underlying the security valuation process.
- How to value bonds
- The various methods of common stock valuation.
- A pragmatic approach to stock valuation

How to Value a Security

The process of determining security valuation involves finding the present value of an asset's expected future cash flows using the investor's required rate of return. Thus, the basic security valuation model can be defined mathematically as follows:

$$V = \sum_{t=1}^{n} \frac{C_t}{(1+r)^t}$$

where V = intrinsic value or present value of a security

C_t = expected future cash flows in period t = 1, ..., n

r = the investor's required rate of return

How to Value Bonds

The valuation process for a bond requires a knowledge of three basic elements: (1) the amount of the cash flows to be received by the investor, which is equal to the periodic interest to be received and the par value to be paid at maturity; (2) the maturity date of the loan; and (3) the investor's required rate of return.

Incidentally, the periodic interest can be received annually or semiannually. The value of a bond is simply the present value of these cash flows. Two versions of the bond valuation model are presented below:

If the interest payments are made annually, then

$$V = \sum_{t=1}^{n} \frac{I}{(1+r)^t} + \frac{M}{(1+r)^n} = I \cdot T2(r,n) + M \cdot T1(r,n)$$

where

I = interest payment each year = coupon interest rate x par value
M = par value, or maturity value, typically $1,000
r = the investor's required rate of return
n = number of years to maturity
T2 = present value interest factor of an annuity of $1 (which can be found in Table 2).
T1 = present value interest factor of $1 (which can be found in Table 1).

EXAMPLE 11

Consider a bond, maturing in 10 years and having a coupon rate of 8 percent. The par value is $1,000. Investors consider 10 percent to be an appropriate required rate of return in view of the risk level associated with this bond. The annual interest payment is $80(8% x $1,000). The present value of this bond is:

$$V = \sum_{t=1}^{n} \frac{I}{(1+r)^t} + \frac{M}{(1+r)^n}$$

$$= I \cdot T2(r,n) + M \cdot T1(r,n)$$

$$= \sum_{t=1}^{10} \frac{\$80}{(1+0.1)^t} + \frac{\$1,000}{(1+0.1)^{10}}$$

$$= \$80 \cdot T2(10\%,10) + \$1,000 \cdot T1(10\%,10)$$

$$= \$80(6.145) + \$1,000(0.386)$$

$$= \$491.60 + 386.00$$

$$= \$877.60$$

If the interest is paid semiannually, then

$$V = \sum_{t=1}^{2n} \frac{I/2}{(1+2/r)^t} + \frac{M}{(1+r/2)^{2n}} = \frac{I}{2} \bullet T2(r/2,2n) + M \bullet T1(r/2,2n)$$

EXAMPLE 12

Assume the same data as in Example 11, except the interest is paid semiannually.

$$V = \sum_{t=1}^{2n} \frac{I/2}{(1+2/r)^t} + \frac{M}{(1+r/2)^{2n}} = \frac{I}{2} \bullet T2(r/2,2n) + M \cdot T1(r/2,2n)$$

$$= \sum_{t=1}^{20} \frac{\$40}{(1+0.05)^t} + \frac{\$1,000}{(1+0.5)^{20}}$$

$$= \$40 \bullet T2(5\%,20) + \$1,000.T1(5\%,20)$$

$$= \$40(12.462) + \$1,000(0.377)$$

$$= \$498.48 + \$377.00$$

= $875.48

How to Value Common Stock

The value of a common stock is the present value of all future cash inflows expected to be received by the investor. The cash inflows expected to be received are dividends and the future price at the time of the sale of the stock.

Single Holding Period

For an investor holding a common stock for only 1 year, the value of the stock would be the present value of both the expected cash dividend to be received in 1 year (D_1) and the expected market price per share of the stock at year-end (P_1). If r represents an investor's required rate of return, the value of common stock (P_0) would be:

$$P_0 = \frac{D_1}{(1+r)^1} + \frac{P_1}{(1+r)^1}$$

EXAMPLE 13

Assume an investor is considering the purchase of stock A at the beginning of the year. The dividend at year-end is expected to be $1.50, and the market price by the end of the year is expected to be $40. If the investor`s required rate of return is 15%, the value of the stock would be:

$$P_0 = \frac{D_1}{(1+r)^1} + \frac{P_1}{(1+r)^1} = \frac{\$1.50}{(1+0.15)} + \frac{\$40}{(1+0.15)}$$

= $1.50 T1(15%,1) + $40 T1(15%,1)

= $1.50(0.870) + $40(0.870)

= $1.31 + $34.80 = $36.11

Multiple Holding Period

Since common stock has no maturity date and is held for many years, a more general, multiperiod model is needed. The general common stock valuation model is defined as follows:

$$P_0 = \sum_{t=1} \frac{D_t}{(1+r)^t}$$

where D_t = dividend in period t.

Two cases of growth in dividends are explained below. They are: (a) Zero growth and (b) constant growth.

(a) Zero Growth Case

In the case of zero growth (i.e., $D_0 = D_1 = ... = D$), then the valuation model reduces to the formula:

$$P_0 = \frac{D}{r}$$

This is the case with a perpetuity. This model is most applicable to the valuation of preferred stocks, as was discuss earlier, or the common stocks of very mature companies such as large utilities. *Note: The capitalization of earnings method* (discussed in the previous chapter) is based on the zero-growth assumption.

EXAMPLE 14

Assuming dividends (D) equals $2.50 and r equals 10 percent, then the value of the stock is:

$$P_0 = \frac{\$2.50}{0.1} = \$25$$

(b) Constant Growth Case

In the case of constant growth, if we assume that dividends grow at a constant rate of g every year [i.e., $D_t = D_0(1 + g)^t$], then the general model is simplified to:

$$P_0 = \frac{D_1}{r - g}$$

In words,

Common stock value = (dividend in year 1) / [(required rate of return) – (growth rate)]

This formula is known as the *Gordon's valuation model*. This model is most applicable to the valuation of the common stocks of very large or broadly diversified firms.

EXAMPLE 15

Consider a common stock that paid a $3 dividend per share at the end of the last year and is expected to pay a cash dividend every year at a growth rate of 10 percent. Assume the investor's required rate of return is 12 percent. The value of the stock would be:

$D_1 = D_0(1 + g) = \$3(1 + 0.10) = \$3.30$

$$P_0 = \frac{D_1}{(r - g)} = \frac{\$3.30}{0.12 - 0.10} = \$165$$

How to Forecast Stock Price: A Pragmatic Approach

Many common stock analysts use the simple formula:

Forecasted price at the end of year = estimated EPS in year t x estimated P/E ratio

where EPS = earnings per share and P/E = price earnings ration or earnings multiple. Of course, for this method to be effective in forecasting the future value of a stock, (a) earnings need to be correctly projected and (b) the appropriate P/E multiple must be applied.

Forecasting EPS is not an easy task. Some accountants use a simple method of forecasting EPS. They use a sales forecast combined with an after tax profit margin, as follows:

(a) Estimated after-tax earnings in year t = (Estimated sales in year t) x (After tax profit margin expected in year t)

(b) Estimated EPS in year t = (Estimated earnings in year t) / (number of common shares outstanding in year t)

EXAMPLE 16

Assume that a company reported sales of $100 million, and its estimated sales will grow at a 6 percent annual rate, while the profit margin is about 8 percent. The company had 2 million shares outstanding. The company's P/E ratio was 15 times earnings and is expected to continue for the next year. Projected sales next year will equal $106 million ($100 million x 1.06).

Estimated after-tax earnings next year is: $106 million x 8% = $8.48 million

Estimated EPS next year = $8.48 million/2 million =$4.24

Then, the company's stock should be trading at a price of $63.60 by the end of next year:

Estimated share price next year= $4.24 x 15 = $63.60

Note: If you are looking for an advisory service's estimated EPS for the next year for a company that you are interested in, you can obtain it from publications such as *Value Line Investment Survey, First Call, Zacks Research,* and *IBES*. These firms constantly poll brokerages for their earnings estimates. From that survey, these companies publish a compilation that includes the high, low, and mean prediction for a company's upcoming quarterly and fiscal year results. Earnings expectations are available on many

electronic quotation services such *as Bloomberg Business News*. The *Wall Street Journal* publishes a short list on notable surprises each day along with its daily listings of quarterly corporate results. Many brokerage houses have information from these two services available. Zack's Web site at **www.zacks.com** or **http://www.zackselite.com/** is an excellent free resource.

What Are The Determinants Of The Price-Earnings Ratio?

What determines the P/E multiple is very complex. Empirical evidence seems to suggest the following factors:

1. historical growth rate in earnings
2. forecasted earnings
3. average dividend payout ratio
4. beta the company's systematic (uncontrollable) risk
5. instability of earnings
6. financial leverage
7. other factors such as competitive position, management ability
8. economic conditions.

Chapter 2 Review Questions – Section 1

1. John Watson's uncle recently passed away, and included in the property that he inherited is a bond that pays an 8% coupon, has a face value of $1,000, has 10 years to maturity, and the investors require a rate of return of 10%. Assuming annual coupon payments, what is the value of the bond?

A. $386.00
B. $491.60
C. $614.50
D. $877.60

2. Present values can be obtained using

A. Present value tables.
B. Excel software.
C. Financial calculators.
D. All of the above.

3. Which of the following criteria theoretically should be used to determine the valuation of common stock?

A. Book value.
B. Cash dividends.
C. Beta coefficient.
D. Standard deviation of returns.

4. Dividend divided by the required rate of return provides stock valuation, assuming

A. A constant growth in dividends.
B. A single holding period.
C. A zero growth in dividends.
D. A beta of 1.

5. The investor’s required rate of return on the firm’s stock is directly applied in determining the value of a stock when using the dividend growth model. True or False?

6. Assume that nominal interest rates just increased substantially but that the expected future dividends for a company over the long run were not affected. As a result of the increase in nominal interest rates, the company's share price should decrease. True or False?

How to Read Beta

Beta measures a security's volatility relative to an average security. Put it another way, it is a measure of a security's return over time to that of the overall market. For example, if ABC's beta is 2.0, it means that if the stock market goes up 10%, ABC's common stock goes up 20%; if the market goes down 10%, ABC goes down 20%. *Note:* Generally, the higher the beta for a security, the greater the return expected (or demanded) by the investor.

There is a relationship between a security's expected (or required return) and its beta, known as the *Capital Asset Pricing Model (CAPM*). The formula to determine a security's expected return follows.

Expected return = (risk-free rate) + (beta) x (market return - risk-free rate)

= (risk-free rate) + (beta) x (market risk premium)

where the risk-free rate equals the rate on a security like a T-bill and the risk-free rate *less* expected market return (e.g., Standard & Poor's 500 Stock Composite Index)is called the *market risk premium*.

The market risk premium is the extra return exceeding that offered on T-bill, to justify for taking on certain risk expressed by *beta*. The relevant expression of risk is the risk of the individual security, or its beta. The higher a stock's beta, the greater the return expected (or required) by the investor.

Here is a guide for how to read betas:

Beta	***Meaning***
0	The security's return is independent of the market. An example is a risk-free security (e.g., T-Bill).
0.5	The security is half as volatile as the market.
1.0	The security is as volatile or risky as the market (i.e., average risk). This is the beta value of the market portfolio (e.g., Standard & Poor's 500).
2.0	The security is twice as volatile or risky, as the market.

Note: Beta of a particular stock is useful in predicting how much the security will go up or down, provided that investors know which way the market will go. Beta helps to figure out risk and expected return.

Betas for stocks widely available in many investment newsletters (e.g., *Value Line Investment Survey)* and online services such as Google, Yahoo, and MSN Money**.** Exhibit 4 presents examples of betas for selected stocks.

Exhibit 4

Betas for some selected corporations

Company	November 2013
Boeing (BA)	1.26
Google (GOOG)	0.96
Toyota (TM)	0.79
Nordstrom (JWN)	1.5
Intel (INTC)	0.97
Wal Mart (WMT)	0.38

Source: MSN Money Investor

What Does It Mean When a Firm's Stock Sells on a High or Low P/E Ratio?

To answer this question, the *Gordon's growth model* can be helpful. If a company's dividends are expected to grow at a constant rate, then

$$P_0 = \frac{D_1}{r - g}$$

where Po = the current price of stock, D_1 = the expected dividend next year, r = the return required by investors from similar investments, and g = the expected growth in dividends. In order to find the P/E ratio, dividing through by expected EPS yields:

$$\frac{P_0}{EPS} = \frac{D_1}{EPS} \times \frac{1}{r - g}$$

Thus, a high P/E ratio may indicate that

(a) Investors expect high dividend growth (g), or
(b) The stock has low risk and, therefore investors are content with a low prospective return (r), or
(c) The company is expected to achieve average growth while paying out a high proportion of earnings (D_1/EPS).

Exhibit 5 shows price-earnings ratios of certain companies compared with their industry averages.

Exhibit 5
P/E ratios

Company	Industry	November 11 2013	Industry Average
Boeing (BA)	Aerospace/Defense - Major Diversified	23.42	20.41
Google (GOOG)	Internet Information Providers	28.25	36.1
Toyota (TM)	Auto Manufacturers - Major	12.97	13.91
Nordstrom (JWN)	Apparel Stores	16.39	-153.85
Intel (INTC)	Semiconductor - Broad Line	12.16	25.58
Wal Mart (WMT)	Discount, Variety Stores	14.75	16.67

What Other Pragmatic Approaches Exist?

In valuing a stock investment, there are several pragmatic techniques you may employ: price-sales (P/S), price-dividends, and price-book (P/B) value ratios.

The Price-Sales (P/S) Ratio

This is an increasingly popular tool for determining underlying stock value. It is computed as:

(Market Price per Share) / (Sales per Share)

A P/S of, say, 0.83 means you are paying 83 cents for every dollar of sales. The P/S ratio reflects a company's underlying strength. A company with a low P/S ratio is more attractive while one with a high ratio is less attractive. *Note*: As a rule of thumb, you should avoid stocks with a P/S ratio of 1.5 or more. Further, you should sell a stock when the ratio is between 3 and 6.

You may use the simple formula:

Expected price = (projected sales per share) x (average P/S ratio)

EXAMPLE 17

The XYZ corporation projects sales to be $3.5 per share. The company's 5-year average P/S ratio is 14.4, which is used as the multiplier. The value of the stock is $51.0 ($3.5 x 14.4)

The Price-Dividends (P/D) Ratio

This is another popular tool for determining underlying stock value. It is computed as:

(Market Price per Share) / (Dividends per Share)

You may use the simple formula:

Expected price = (projected dividends per share) x (average P/D ratio)

EXAMPLE 18

The XYZ corporation projects dividends to be $0.88 per share. The company's 5-year average P/D ratio is 61.3, which is used as the multiplier. The value of the stock is $53.94 ($0.88 x 61.3)

The Price-Book (P/B) Ratio

The price-book (P/B) ratio is a ratio used to compare a stock's market value to its book value. It is calculated by dividing the current closing price of the stock by the latest quarter's book value per share. Book value (net asset, liquidation value) per share is the amount of corporate assets for each share of common stock. You may benefit by uncovering stock that is selling below book value or whose assets are significantly undervalued. A stock may represent a good value when its market price is below or close to book value because the security is undervalued. Companies with lower ratios of market price to book value have historically earned better returns than those with higher ratios.

(Market Price per Share) / (Book Value per Share)

where book value per share = total stockholders' equity/total shares outstanding.

EXAMPLE 19

You are thinking of investing in a company that has a market price per share of $40. The book value per share is = $50. This may be a buying opportunity, since market price ($40) is well below book value ($50), or P/B ratio of .8 ($40/$50) and an upward movement in prices may occur.

You may use the simple formula: Expected price = projected book value per share x average P/B ratio

EXAMPLE 20

The XYZ corporation projects the book value per share to be $60 per share. The company's 5-year average P/B ratio is .8, which is used as the multiplier. The value of the stock is $48 ($60 x .8)

Note: Various financial services track industries and companies. They offer expectations as to future earnings, sales, dividends, book value and even market prices of stock. For example, reference may be made to Standard and Poor's *Stock Reports* and Value Line's *Investment Survey*. *Institutional Brokers Estimate System* (I/B/E/S) is a database available on CompuServe that provides consensus earnings estimates on over 3,400 publicly traded corporations. *Zack*'s performs a similar service and is available through Dow Jones News/Retrieval. These provide a thorough analysis of companies and provide clues as to future expectations and a source of earnings estimates.

What Is The Bottom Line?

Several valuations were presented so far. The key is to decide which valuation model or models is best suited for a company you are interested in. For example, if your company is a mature, dividend-paying stock, such as a public utility, which is generally a low-growth stock, the dividend-based models make sense. If your company is a growth-oriented company, you should use a earnings-based model since the stock's price will be driven by earnings potential rather than dividends. Nonetheless, it is a good idea to perform sensitivity analysis and obtain a range of estimates. Any final decision on your valuation estimates should, however, be based on a better understanding of the company, its management, and its competitive environment.

How Do You Value An Income Producing Property?

There are several rule of thumb methods to arrive at the estimated value of an income-producing property. They include:

Gross Income Multiplier. Gross income multiplier is calculated as: Purchase price/gross rental income.

EXAMPLE 21

Mr. Smith is considering a duplex apartment. The property is located in an attractive suburb. The cost of the building is $219,000. Assume the following data for the property:

ANNUAL PROPERTY OPERATING DATA (12 MONTHS – PROJECTED)	
Gross Scheduled Income	$22,800
+ Other Income	800
Total Gross Income	23,600
- Vacancy/Credit Losses (2%)	472

Gross Operating Income (GOI)			23,128
Operating Expenses (with percent of GOI)			
Property insurance	1.93%	$446	
Real Estate Taxes	13.22%	3,058	
Repairs and Maintenance	1.45%	335	
Sewer and Water	2.90%	671	
Total Operating Expenses (19.50%)			4,510
Net Operating Income (80.50%)			18,618
- Debt Service (Principal and Interest)			21,601
Before-Tax Cash Flow			($2,983)

In Mr. Smith's example, the gross income multiplier is:

$219,000/$23,600 = 9.28

A duplex in the similar neighborhood may be valued at "8 times annual gross." Thus, if its annual gross rental income amounts to $23,600, the value would be taken as $188,800 (8 x $23,600). Warning: This approach should be used with caution. Different properties have different operating expenses, which must be taken into account in determining the value of a property.

Net Income Multiplier. Net income multiplier is calculated as: Purchase price/net operating income (NOI). *Note:* This is equivalent to the price-earnings (P/E) ratio used in the analysis of stocks.

In Mr. Smith's example, the net income multiplier is:

$219,000/$18,618 = 11.76

Capitalization rate. Capitalization rate is almost the same as the net income multiplier, only used more often. It is the reciprocal of the net income multiplier. That is:

Net operating income (NOI)/purchase price

EXAMPLE 22

Let us go back to Mr. Smith's example. The duplex's capitalization rate is $18,618/$219,000 = 8.5%. Whether it is over-priced or not depends on the rate of the similar type property derived from the market place. Suppose the market rate is 10%. That means the fair market value of the similar duplex is $18,618/10% =$186,180. Mr. Smith may be overpaying for this property.

Discounted cash flow. This method uses the present value technique under which the asking price or value of a real estate investment is the present worth of the future after-tax cash flows from the investment, discounted at the rate of return required by the investor.

EXAMPLE 23

You require a rate of return of 10 percent on a piece of property advertised for sale at $150,000. You estimate that rents can be increased each year for five years. You expect that after all expenses you would have an after-tax cash flow of $5,000, $5,200, $5,400, $5,600, and $5,800 for each year. You also expect that this property can sell for 200,000 at the end of the fifth year. To determine the amount you would be willing to pay for this property, we can set up the present value table as follows:

Year	*After-tax cash flow*	*Present value of $1 (Table 1)*	*Present Value*
1	$5,000	.909	$4,545
2	5,200	.826	4,295
3	5,400	.751	4,055
4	5,600	.683	3,825
5	5,800	.621	3,602
Sell property	$200,000	.621	124,200
Present value of property			$144,522

You would be willing to pay $144,522 for this property.

Conclusion

This course covered business valuations ranging from bonds, preferred stock and common stock to real estate. Valuation is essentially a present value concept that involves estimating future cash flows and discounting them at a required rate of return. The value of a bond is essentially the present value of all future interest and principal payments. Stock price may be expressed as a function of the expected future dividends and a rate of return required by investors. The Gordon's valuation model reflects this process. Real estate valuation involved several rule-of-thumb valuation methods.

TABLE 1

PRESENT VALUE OF $1 = T1(i,n)

PERIODS	4%	6%	8%	10%	12%	14%	16%	18%	20%	22%	24%	26%	28%	30%	40%
1	.962	.943	.926	.909	.893	.877	.862	.847	.833	.820	.806	.794	.781	.769	.714
2	.925	.890	.857	.826	.797	.769	.743	.718	.694	.672	.650	.630	.610	.592	.510
3	.889	.840	.794	.751	.712	.675	.641	.609	.579	.551	.524	.500	.477	.455	.364
4	.855	.792	.735	.683	.636	.592	.552	.516	.482	.451	.423	.397	.373	.350	.260
5	.822	.474	.681	.621	.567	.519	.476	.437	.402	.370	.341	.315	.291	.269	.186
6	.790	.705	.630	.564	.507	.456	.410	.370	.335	.303	.275	.250	.227	.207	.133
7	.760	.665	.583	.513	.452	.400	.354	.314	.279	.249	.222	.198	.178	.159	.095
8	.731	.627	.540	.467	.404	.351	.305	.266	.233	.204	.179	.157	.139	.123	.068
9	.703	.592	.500	.424	.361	.308	.263	.225	.194	.167	.144	.125	.108	.094	.048
10	.676	.558	.463	.386	.322	.270	.227	.191	.162	.137	.116	.099	.085	.073	.035
11	.650	.527	.429	.350	.287	.237	.195	.162	.135	.112	.094	.079	.066	.056	.025
12	.625	.497	.397	.319	.257	.208	.168	.137	.112	.092	.076	.062	.052	.043	.018
13	.601	.469	.368	.290	.229	.182	.145	.116	.093	.075	.061	.050	.040	.033	.013
14	.577	.442	.340	.263	.205	.160	.125	.099	.078	.062	.049	.039	.032	.025	.009
15	.555	.417	.315	.239	.183	.140	.108	.084	.065	.051	.040	.031	.025	.020	.006
16	.534	.394	.292	.218	.163	.123	.093	.071	.054	.042	.032	.025	.019	.015	.005
17	.513	.371	.270	.198	.146	.108	.080	.060	.045	.034	.026	.020	.015	.012	.003
18	.494	.350	.250	.180	.130	.095	.069	.051	.038	.028	.021	.016	.012	.009	.002
19	.475	.331	.232	.164	.116	.083	.060	.043	.031	.023	.017	.012	.009	.007	.002
20	.456	.312	.215	.149	.104	.073	.051	.037	.026	.019	.014	.010	.007	.005	.001
21	.439	.294	.199	.135	.093	.064	.044	.031	.022	.015	.011	.008	.006	.004	.001
22	.422	.278	.184	.123	.083	.056	.038	.026	.018	.013	.009	.006	.004	.003	.001
23	.406	.262	.170	.112	.074	.049	.033	.022	.015	.010	.007	.005	.003	.002	
24	.390	.247	.158	.102	.066	.043	.028	.019	.013	.008	.006	.004	.003	.002	
25	.375	.233	.146	.092	.059	.038	.024	.016	.010	.007	.005	.003	.002	.001	
26	.361	.220	.135	.084	.053	.033	.021	.014	.009	.006	.004	.002	.002	.001	
27	.347	.209	.125	.076	.047	.029	.018	.011	.007	.005	.003	.002	.001	.001	
28	.333	.196	.116	.069	.042	.026	.016	.010	.006	.004	.002	.002	.001	.001	
29	.321	.185	.107	.063	.037	.022	.014	.008	.005	.003	.002	.001	.001	.001	
30	.308	.174	.099	.057	.033	.020	.012	.007	.004	.003	.002	.001	.001		
40	.208	.097	.046	.022	.011	.005	.003	.001	.001						

TABLE 2

PRESENT VALUE OF AN ANNUITY OF $1 = T2(i,n)

Periods	3%	4%	5%	6%	7%	8%	10%	12%	14%	16%	18%	20%	22%	24%
1	.9709	.9615	.9524	.9434	.9346	.9259	.9091	.8929	.8772	.8621	.8475	.8333	.8197	.8065
2	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7355	1.6901	1.6467	1.6052	1.5656	1.5278	1.4915	1.4568
3	2.8286	2.7751	2.7232	2.6730	2.6243	2.5771	2.4869	2.4018	2.3216	2.2459	2.1743	2.1065	2.0422	1.9813
4	3.7171	3.6299	3.5460	3.4651	3.3872	3.3121	3.1699	3.0373	2.9137	2.7982	2.6901	2.5887	2.4936	2.4043
5	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.7908	3.6048	3.4331	3.2743	3.1272	2.9906	2.8636	2.7454
6	5.4172	5.2421	5.0757	4.9173	4.7665	4.6229	4.3553	4.1114	3.8887	3.6847	3.4976	3.3255	3.1669	3.0205
7	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	4.8684	4.5638	4.2883	4.0386	3.8115	3.6046	3.4155	3.2423
8	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5.3349	4.9676	4.6389	4.3436	4.0776	3.8372	3.6193	3.4212
9	7.7861	7.4353	7.1078	6.8017	6.5152	6.2469	5.7590	5.3282	4.9464	4.6065	4.3030	4.0310	3.7863	3.5655
10	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.1446	5.6502	5.2161	4.8332	4.4941	4.1925	3.9232	3.6819
11	9.2526	8.7605	8.3064	7.8869	7.4987	7.1390	6.4951	5.9377	5.4527	5.0286	4.6560	4.3271	4.0354	3.7757
12	9.9540	9.3851	8.8633	8.3838	7.9427	7.5361	6.8137	6.1944	5.6603	5.1971	4.7932	4.4392	4.1274	3.8514
13	10.6350	9.9856	9.3936	8.8527	8.3577	7.9038	7.1034	6.4235	5.8424	5.3423	4.9095	4.5327	4.2028	3.9124
14	11.2961	10.5631	9.8986	9.2950	8.7455	8.2442	7.3667	6.6282	6.0021	5.4675	5.0081	4.6106	4.2646	3.9616
15	11.9379	11.1184	10.3797	9.7122	9.1079	8.5595	7.6061	6.8109	6.1422	5.5755	5.0916	4.6755	4.3152	4.0013
16	12.5611	11.6523	10.8378	10.1059	9.4466	8.8514	7.8237	6.9740	6.2651	5.6685	5.1624	4.7296	4.3567	4.0333
17	13.1661	12.1657	11.2741	10.4773	9.7632	9.1216	8.0216	7.1196	6.3729	5.7487	5.2223	4.7746	4.3908	4.0591
18	13.7535	12.6593	11.6896	10.8276	10.0591	9.3719	8.2014	7.2497	6.4674	5.8178	5.2732	4.8122	4.4187	4.0799
19	14.3238	13.1339	12.0853	11.1581	10.3356	9.6036	8.3649	7.3658	6.5504	5.8775	5.3162	4.8435	4.4415	4.0967
20	14.8775	13.5903	12.4622	11.4699	10.5940	9.8181	8.5136	7.4694	6.6231	5.9288	5.3527	4.8696	4.4603	4.1103
21	15.4150	14.0292	12.8212	11.7641	10.8355	10.0168	8.6487	7.5620	6.6870	5.9731	5.3837	4.8913	4.4756	4.1212
22	15.9369	14.4511	13.1630	12.0416	11.0612	10.2007	8.7715	7.6446	6.7429	6.0113	5.4099	4.9094	4.4882	4.1300
23	16.4436	14.8568	13.4886	12.3034	11.2722	10.3711	8.8832	7.7184	6.7921	6.0442	5.4321	4.9245	4.4985	4.1371
24	16.9355	15.2470	13.7986	12.5504	11.4693	10.5288	8.9847	7.7843	6.8351	6.0726	5.4509	4.9371	4.5070	4.1428
25	17.4131	15.6221	14.0939	12.7834	11.6536	10.6748	9.0770	7.8431	6.8729	6.0971	5.4669	4.9476	4.5139	4.1474
26	17.8768	15.9828	14.3752	13.0032	11.8258	10.8100	9.1609	7.8957	6.9061	6.1182	5.4804	4.9563	4.5196	4.1511
27	18.3270	16.3296	14.6430	13.2105	11.9867	10.9352	9.2372	7.9426	6.9352	6.1364	5.4919	4.9636	4.5243	4.1542
28	18.7641	16.6631	14.8981	13.4062	12.1371	11.0511	9.3066	7.9844	6.9607	6.1520	5.5016	4.9697	4.5281	4.1566
29	19.1885	16.9837	15.1411	13.5907	12.2777	11.1584	9.3696	8.0218	6.9830	6.1656	5.5098	4.9747	4.5312	4.1585
30	19.6004	17.2920	15.3725	13.7648	12.4090	11.2578	9.4269	8.0552	7.0027	6.1772	5.5168	4.9789	4.5338	4.1601
40	23.1148	19.7928	17.1591	15.0463	13.3317	11.9246	9.7791	8.2438	7.1050	6.2335	5.5482	4.9966	4.5439	4.1659

Chapter 2 Review Questions – Section 2

7. The statement that "the security is as volatile or risky as the overall market" means a beta of

A. 0.
B. 1.
C. 2.
D. 0.5.

8. An estimated earnings per share (EPS) report is released by

A. ESPN.
B. HSN.
C. Thompson' First Call.
D. Google.

9. Beta measures

A. The amount by which current assets exceeds current liabilities.
B. The total assets minus total liabilities.
C. The security's volatility relative to an average security or a securities return over time to that of the overall market.
D. Ownership holding in a business of more than 50%.

10. Empirical evidence suggests that factors that are determinants of the Price-Earnings ratio in an ongoing business can include accumulated value of a company's assets less liabilities presuming the assets are sold separately. True or False?

11. _____ is a pragmatic technique that is computed as the market price per share divided by revenue per share.

A. Gordon's Valuation Model.
B. Price-Dividends (P/D) Ratio.
C. Price-Book (P/B) Ratio.
D. Price-Sales (P/S) Ratio.

12. The price-dividend ratio is

A. (sales per share) / (market price per share)
B. (market price per share) / (dividends per share)
C. (market price per share) / (book value per share)
D. (market price per share) / (sales per share)

13. A company has 100,000 outstanding common shares with a market value of 20 per share. Dividends of 2 per share were paid in the current year, and the enterprise has a dividend-payout ratio of 40%. The price-to-earnings (P/E) ratio of the company is

A. 2.5
B. 10
C. 4
D. 50

14. Purchase price divided by net operating income is

A. Gross Income Multiplier.
B. Net Income Multiplier.
C. Capitalization rate.
D. Discounted cash flow.

Glossary

Accrual accounting. Form of accounting that recognizes income when earned and expenses when incurred. As opposed to cash basis (or modified cash basis) accounting.

Adjusted book value. Asset values from a company's balance sheet restated to fair market values, minus the fair market value of liabilities.

Adjusted earnings. A company's earnings "adjusted" for unusual income or expense items, distributions to owners in the form of excessive compensation and perks, and similar items. (Also referred to as normalized earnings.)

Adjusted net assets valuation method. A valuation method that establishes the value of the company by restating its assets and liabilities from book values to fair market values. For cash basis companies, accounts receivable, accounts payable, and accrued liabilities are established. The value of the company is the value of the company's assets minus the value of its liabilities.

Appraisal. The process of establishing an estimate of the value of something. Generally synonymous with "valuation." A general way to determine value using one or more specific appraisal methods, i. e. asset based methods, income based methods, or market methods.

Appraisal date. The date at which the property is being valued. As distinguished from the report date.

Appraisal method. Assumptions and mathematical computations used to estimate the value of a business or ownership holding. Within "approaches" to value, a specific way of determining value.

Appraised value. The value estimate assigned to a piece of property by an appraiser/valuator.

Approaches to value. Often defined in various ways. Three common "approaches" to value are the "assets" approach, the "income" approach, and the "market" approach.

Assets approach to value. A valuation approach that presumes the value of a company or ownership interest is worth the value of its identifiable assets less the value of its liabilities.

Book value. The accounting value assigned to the asset and liability items of a business. With respect to assets, the cost of the asset less depreciation or amortization. With respect to a company in total, often, total assets minus total liabilities. Often synonymous with net worth, net book value, and owners' equity.

Build-up capitalization rate. Well accepted method for establishing the rate of return an investor should expect to earn from an investment in a security (closely held company).

Business valuation. The act or process of establishing an opinion or estimate of value for a business or ownership interest.

Capitalization. The conversion of income into value. The capital structure of a business. The determination of an asset value based on expenditures.

Capitalization factor. The inverse of a capitalization rate. For example, a capitalization rate of 25% is a capitalization factor of 4.0 (1.0/25%). Capitalization factors and capitalization rates are used interchangeably by appraisers.

Capitalization of earnings valuation method. A valuation methodology that presumes the value of a business is generally determined by dividing its earnings by the investment rate of return the business should yield for investors.

Capitalization rate. A divisor used to convert an income amount into a value equivalent. The rate used in the denominator of the capitalization of earnings method. Generally determined to be the rate of return expected for an investment, reduced by the growth expected for the investment. A key component of many valuations is the determination of this rate.

Capital structure. Usually, the percentage of the company's invested capital made up of interest bearing debt and equity. Possibly, the composition of the liabilities and equity side of the balance sheet. Possibly, values restated to fair market values.

Cash basis accounting. Form of accounting that establishes income and expenses based on cash receipts and payments. Typically, a "modified" cash basis of accounting that recognizes depreciation.

Cash flow. Cash income created by a company. It is typically a revenue or expense stream that changes a cash account over a given period. Cash inflows usually arise from one of three activities - financing, operations or investing - though they also occur as a result of donations or gifts in the case of personal finance. Cash outflows result from expenses or investments.

C-corporation. A corporation that pays income taxes at the corporate level.

Closely held business. Typically, a company that is owned by relatively few individuals and is not publicly traded.

Control. Usually, the implication of a partial holding in a business that enables the holding to have higher than proportional influence over the operations of the business. Often equated with the majority holding, but not necessarily so. The power to direct the management and policies of the business. A valuation issue often important but measured by appraisers in significantly different ways.

Control premium. The enhanced value associated with a controlling ownership interest. Usually, a percentage increase in the value of a holding made solely because the holding has enhanced value because it is able to control the operations of the business. Valuation studies often imply the percentage should be 35% or more.

Discounted earnings valuation method. A valuation methodology that presumes the value of a business or ownership holding is equivalent to the expected earnings anticipated for the company in future years.

A conceptually sound methodology often dismissed as being too speculative to be valuable for fair market value appraisals.

Discount rate. A rate of return used to convert a value in the future into a present value. The rate of return used to discount future values to present values in the discounted earnings valuation method.

Discounts. Value reductions for specific reasons. For business valuation purposes, values otherwise determined are often decreased by lack of marketability discounts, minority discounts, illiquidity discounts, lack of control discounts, key person discounts, and others.

Discretionary cash flow. Cash flows of a business generally available for distributions to owners and for reinvestment.

Earnings. Might at times refer to net income, pre-tax income, or other variations of "income."

Earnings before taxes (EBT). An indicator of a company's financial performance calculated as:

= Revenue - Expenses (excluding tax). It is widely used for valuation purposes because the use of such an earnings value will eliminate distortions created by companies having different income tax rates. Often, income before Federal income taxes. Often, income before Federal and state income taxes.

Earnings before interest and taxes (EBIT). An earnings value used for valuation purposes, often, because the presumption is the use of such an earnings value will eliminate distortions created by companies having different income tax rates and different debt levels.

Earnings before interest, taxes, depreciation, and amortization (EBITDA). An earnings value used for valuation purposes, often, because the presumption is the use of such an earnings value will eliminate distortions created by companies having different income tax rates, different debt levels, and different fixed asset levels.

Economic life. The useful life of an asset.

Enterprise value. The value of the business in total. This generally presumes the business is owned by a single individual. Usually, a value without respect to a control premium or minority discount.

Equity. Owner investments in a company. An important implication is whether the value is expressed as a book value or a fair market value.

Excess earnings valuation method. A valuation method that presumes a company should be able to earn a predictable level of income based on its tangible assets. To the extent the company earns more than the predictable level of income, capitalized, the company is deemed to have intangible assets. Also referred to as the "formula" method, the IRS method, and the Treasury method.

Fair market value. The price at which property would change hands between a willing buyer and a willing seller, in an arm’s length transaction, when both parties have relevant knowledge of the facts, and neither is compelled to buy or sell. The definition of value for tax valuations and many others.

Fair value. A definition of value used in litigation situations in particular. Generally, what is "fair" based on the circumstances of the situation or in terms of statutory or case law.

"Formula" valuation method. Another name for the excess earnings valuation method.

Going concern value. The value of a company presuming it remains in operation. As opposed to liquidation value.

Goodwill. The intangible value of a company's trade name, customer base, and similar items. Sometimes referred to as "blue sky," sometimes as intangible assets.

Guideline company. Company similar to the company being valued that is used to value the company. A guideline company might be a publicly traded company or another closely held company.

Income approach to value. Valuation methodology that establishes the value of a company or ownership holding based on the company's earnings. Sometimes overlaps with the concept of the "market approach" to value.

Intangible assets. Assets that are not tangible. Often, assets such as goodwill, patents, trademarks, a customer base, etc.

Invested capital. Usually, the value of the company's equity and long-term debt at book values. Possibly, equity and interest bearing debt or another variation. Possibly, values at fair market values.

"IRS" valuation method. See excess earnings valuation method.

Lack of marketability. A phrase used to describe the lack of a market for the sale of ownership holdings in closely held businesses, particularly when such businesses are compared to publicly traded businesses.

Lack of marketability discount. A value reduction in dollars or as a percentage of the value of the company or ownership holding without regard to the discount. Often, a percentage reduction of 15% to 45%. Might be referred to as a "marketability discount" or an "illiquidity discount."

Liquidation value. The value of a business not as a going concern. Often, the accumulated value of a company's assets (less liabilities) presuming the assets are sold separately.

Majority holding. Ownership holding in a business of more than 50%.

Marketability discount. See lack of marketability discount.

Market approach to value. An approach for establishing the value of a business or ownership holding using sales of similar businesses or ownership holdings. Might overlap in concept with the assets approach to value or the earnings approach to value.

Minority discount. A discount often associated with a minority ownership holding in a business because such a holding lacks the ability to control the affairs of the business. Should be based on the relationship

between the control holding and the minority holding(s), although in practice, a 15% to 35% discount is often applied to non-controlling holdings based on averages determined by various "studies."

Minority holding. An ownership holding in a business of less than 50%. Sometimes, an ownership holding of 50%.

Net assets. Total assets minus total liabilities.

Net income. Revenues less expenses as recorded for accounting purposes.

Non-operating items. Assets owned by a business that do not contribute to the operating profits of the company. Assets such as items owned for the personal enjoyment of the owner(s). Usually, non-operating items are valued separately and added to the value of the company otherwise determined.

Premium. The increase in the value of something, usually as a percent of something. Often, a control premium. Also, elements in the "build-up" capitalization rate.

Price/earnings valuation method. The valuation of a company or ownership interest in which a ratio determined by publicly traded stocks or sales of closely held businesses is used to value the subject business. For example, if the price/earnings ratio is determined to be 6.2, and the subject company's earnings are $100,000, the value of the company is estimated to be $620,000 ($100,000 times 6.2).

Rate of Return. For business valuations, typically, the earnings an investor expects to receive on an annual basis expressed as a percent of the investment made in the business.

Replacement cost. The cost to replace something.

Report date. The date the valuation report is completed or dated.

Rule of thumb valuation methods. Any valuation method unique to an industry that uses general assumptions to value the business or ownership holding. Often, a term used to discredit valuation methods used by business owners in general.

S-corporation. Corporation that does not pay income taxes at the corporate level. S-corporation income is reported ratably on the income tax returns of the shareholders.

"Treasury" valuation method. See excess earnings valuation method.

Valuation. The act or process of assigning a value to something. Generally synonymous with "appraisal."

Valuation date. The date at which the property is being valued. As distinguished from the report date.

Working capital. The amount by which current assets exceed current liabilities.

Index

Review Question Answers

Chapter 1 Review Questions Answers

1. The only reason for demand for business evaluation is buying or selling a business. True or False?

True is incorrect. The reason for the valuation might be for the purchase or sale of the business, mergers and acquisitions, buy-back agreements, expanding the credit line, or tax matter.

False is correct. This is not the only reason for valuation; it can include adding a credit line or buy-back agreements.

2. The reasons for business valuation include shareholder litigation and divorce action. True or False?

True is correct. Valuation presents numerous opportunities such as divorce action, estate taxes, and insurance claims.

False is incorrect. Valuation is not restricted only to securities such as stocks and bonds.

3. No single value can be assigned to the worth of a business. True or False?

True is correct. Usually, *value* is determined by an interested party. Although there is usually no single value (or "worth") that can be associated with a business in all situations, there is usually a defendable value that can be assigned to a business in most situations.

False is incorrect. Valuation can be based on the company's assets, the company's loyal customers, and/or the value as determined by an interested party.

4. To be a proficient valuation analyst a CFO needs to know what litigation is involved in the process. True or False?

True is incorrect. To be a valuation expert, a CFO requires analytical and writing skills. More specifically, she must be adept at financial analysis, economic forecasts, accounting and audit fundamentals, income taxes, and legal and economic research.

False is correct. To be a proficient valuation analyst a CFO requires analytical and writing skills including financial analysis and quantitative skills.

5. In valuing a business the following factor that is NOT considered is

A. Incorrect. The company's history tells a lot of how risky the business can be in the future.
B. **Correct.** The leverage means the use of other people's money in an effort to increase the company's return on investment.
C. Incorrect. The valuation process is an art using basic steps and factors that include the company's financial position.
D. Incorrect. The company's growth potential in earnings and sales is a major determinant in a businesses' appraisal.

6. To reduce valuation errors a variety of

A. **Correct.** The major assumptions of the valuation must be clearly spelled out. A variety of "what-if" scenarios must be investigated to reduce valuation errors.
B. Incorrect. That is the accumulated value of a company's assets less liabilities presuming the assets are sold separately.
C. Incorrect. It is only used to establish the value of a company or ownership holding based on the company's earnings without considering all the other valuation factors.
D. Incorrect. "What if" scenarios must be investigated to reduce valuation errors.

7. The price at which property would change hands between a willing buyer and a willing seller is called

A. **Correct.** Fair market value is generally defined as the price at which property would change hands between a willing buyer and a willing seller, when neither is compelled to act and both have a reasonable knowledge of the relevant facts. With the asset approach, assets are valued at fair (i.e., appraised) market value.
B. Incorrect. Replacement value is the cost of replacing something. The use of the definition might be applicable for establishing 'damages" in antitrust suits, in condemnation proceedings, and in similar situations.
C. Incorrect. Going concern value is the value of a business based on the presumption that the business will continue as an operating entity. That is, the company will not be liquidated.
D. Incorrect. Liquidation value is the value of an item (a business) sold to the highest available bidder.

8. The replacement value is

A. Incorrect. The fair market value (or price) is the price that a given property or asset would fetch in the marketplace, subject to the following conditions: (1) Prospective buyers and sellers are reasonably knowledgeable about the asset; they are behaving in their own best interests and are free of undue pressure to trade. (2) A reasonable time period is given for the transaction to be completed. Given these conditions, an asset's fair market value should represent an accurate valuation or assessment of its worth.
B. Incorrect. The lowest value is usually a liquidation value based on its sale to the highest bidder.
C. Incorrect. This is a "going concern value." Going concern value is the value of a business based on the presumption that the company will not be liquidated.
D. **Correct.** The replacement value is the price that will have to be paid to replace an existing asset with a similar asset. This is relevant because the replacement cost will most likely be different than fair market value or net realizable value.

9. Going concern value is synonymous with the replacement value. True or False?

True is incorrect. Going concern value is the value of a business based on the presumption that the business will continue as an operating entity. That is, the company will not be liquidated.

False is correct. If the company is to be "duplicated," the company's value might be based on asset replacement values. A company's going concern value will usually be its fair market value.

10. An approach to valuation that is based on values of comparable companies in the industry and may establish the companies value based on actual sales that are indicative of the company's current value which is

A. Incorrect. It is an approach based the company's future expected earnings. The earnings approach considers a company's value to be equivalent to its ability to create earnings (or cash flow).
B. **Correct.** Values of comparable companies in the industry may provide useful norms. The idea is to establish the company's value based on actual sales that are indicative of the company's current value.
C. Incorrect. It considers the company's value to be equivalent to the value of its net tangible assets. If the company had filed for dissolution of its business, then its value might be based on the liquidation of the company' assets.
D. Incorrect. In a highly competitive industry companies might be reduced in value because of such factors as competitive pressures and pricing discounts. The company's value is often determined by an evaluation of the economic outlook for the industry.

11. A business evaluation method that presumes the value of a company is equivalent to the value of its

net tangible assets is

A. Incorrect. It is a method in many ways opposite of the adjusted Net Asset valuation Method. It uses income as opposed to assets to value the business.
B. Incorrect. This method implies that within an industry a given level of company assets will generate a particular level of earnings. To the extent a company has earnings above the expected level of earnings, the company is presumed to have enhanced its value.
C. **Correct.** The adjusted net assets valuation method presumes the value of a company is equivalent to the value of its net tangible assets. Asset values are often based on fair market values when the company is expected to continue as a going concern, liquidated values when the company is not expected to continue as a going concern, and replacement values when the costs of duplicating the company are being assessed.
D. Incorrect. This method equates the value of a business with the cash flow the business is expected to create.

12. There are many ways to determine the value of a business. One of the popular methods that determines the value of a business based on the revenue generating capacity of the company is

A. Incorrect. This method presumes the value of a company is equivalent to the value of its net tangible assets, often based on fair market values.
B. Incorrect. It is in many ways opposite to the adjusted net assets valuation. It uses income as opposed to assets to value the business.
C. **Correct.** The value of the company may be determined based on the revenue generating capacity of the company. For example, many Internet stocks that lose money in the short run and yet have great future earnings potential tend to derive their value from their revenue generating capacity or registered member subscriptions.
D. Incorrect. It is predicated on the notion that price-earnings ratios (P/Es) of publicly traded stock might be indicative of a closely held company's value.

13. Using the Gross Revenue Multiplier Method: Where value of the business = Revenue x Gross Revenue Multiplier: Gross revenue is $32,500,000 and Gross Revenue Multiplier is .4, the valuation is

A. Incorrect. 15,000,000/32,500,000 = .46 (Gross Revenue Multiplier)
B. **Correct.** $32,500,000 x .4 = $13,000.000
C. Incorrect. 32,000,000/32,500,000 = .99 (Gross Revenue Multiplier)
D. Incorrect. 32,000,000 x .4 = $13,000,000

14. The value of the business equals present earnings (or cash flow) generated by the business. True or False?

True is incorrect. The value of business is dictated by the *future* earnings power of the business.

False is correct. The value of the business equals the present value of the earnings (or cash flow) projection plus present value of terminal value (selling price)

15. When a stock is closely held, is traded infrequently, or is traded in an erratic market, conventional valuation models do not work. True or False?

True is correct. When a stock is closely held, some other measure of value must be used. In many instances, the next best measure may be found in the prices at which the stocks of companies engaged in the same or a similar line of business are selling in a free and open market.

False is incorrect. Conventional valuation models typically require knowledge of the company's key financial variables such as earnings and assets. These data are widely available and transparent.

Chapter 2 Review Questions – Section 1 Answers

1. John Watson's uncle recently passed away, and included in the property that he inherited is a bond that pays an 8% coupon, has a face value of $1,000, has 10 years to maturity, and the investors require a rate of return of 10%. Assuming annual coupon payments, what is the value of the bond?

A. Incorrect. $386.00 results from only taking into account the present value of the lump sum principal of the bond.
B. Incorrect. $491.60 results from only taking into account the annuity of coupon payments.
C. Incorrect. $614.50 results from incorrectly multiplying the bond's $1,000 face value by the annuity interest factor, 6.145, instead of the interest factor for the present value of the lump sum, 0.386.
D. **Correct.** The value of the bond is equal to the sum of (1) the product of the coupon payments and the correct annuity factor, and (2) the product of the face value of the bond and the correct present value factor. Because the bond has 10 periods to maturity and the effective interest rate is 10%, the interest factor for the present value of the lump sum is 0.386, and the interest factor for the present value of the annuity is 6.145. Therefore, multiplying the $80 annual interest payment by its interest factor of 6.145 equals a present value of $491.60. Also, the present value of the lump sum is equal to the $1,000 face value of the bond multiplied by 0.386, which

equals $386.00. Thus, the total value of the bond is the sum of these two present values, or $877.60.

2. Present values can be obtained using

A. Incorrect. This is one approach to computing present values.
B. Incorrect. Spreadsheet software such as Excel has present value options. This is one popular and speedy way to find present values.
C. Incorrect. Financial calculators have present value buttons. This is one handy way to find present values.
D. **Correct.** All of the above can be used to calculate present values. Besides manual calculations using present value tables, present value calculations also can be done using financial calculators and spreadsheet software such as Excel.

3. Which of the following criteria theoretically should be used to determine the valuation of common stock?

A. Incorrect. Book value is a measure of the stock's worth on a company's accounting records.
B. **Correct.** The measure of the value of an individual stock is dependent entirely upon the stream of future cash flows that it will produce. To determine the stock's current value, these cash flows should be discounted to time zero (now) to obtain the stream's present value. Stocks primarily provide cash flows to investors via dividends (including share repurchases and liquidating dividends) and capital gain (loss) at the time of sale. Once the stream of cash flows has been discounted over a significant number of periods, it is easy to see that the dividend stream, not the capital gain (loss) in the final period, drives the value of the stock in question. Of course, all firms do not pay a dividend.
C. Incorrect. The beta coefficient is a measure of how volatile the price movements of a stock are relative to the market as a benchmark.
D. Incorrect. Standard deviation is a measure of risk. While risk is a consideration for the investor, one of the fundamental concepts in finance is that there is (should be) a trade-off between risk and return, and as long as risk is compensated for, it is not a primary consideration.

4. Dividend divided by the required rate of return provides stock valuation, assuming

A. Incorrect. In the case of constant growth, if we assume that dividends grow at a constant rate of g every year [i.e., $D_t = D_0(1 + g)^t$], then the general model is simplified to: $P_0 = D_1 / (r-g)$.
B. Incorrect. For an investor holding a common stock for only 1 year, the value of the stock would be the present value of both the expected cash dividend to be received in 1 year and the expected market price per share of the stock at year-end.

C. **Correct.** In the case of zero growth (i.e., D0 = D1 = ... = D), then the valuation model reduces to the formula: P0 = D/r. This is the case with a perpetuity. This model is most applicable to the valuation of preferred stocks, or the common stocks of very mature companies such as large utilities

D. Incorrect. A market beta is 1. The security is a volatile or risky as the market (i.e., average risk). The beta value of the company does not directly provide stock valuation.

5. The investor's required rate of return on the firm's stock is directly applied in determining the value of a stock when using the dividend growth model. True or False?

True is correct. Gordon's valuation model or the dividend growth model is used to calculate the price of a share. P0 = D1 / (r-g).

False is incorrect. The Gordon's model uses the growth rate in dividends and the investor's required rate of return.

6. Assume that nominal interest rates just increased substantially but that the expected future dividends for a company over the long run were not affected. As a result of the increase in nominal interest rates, the company's share price should decrease. True or False?

True is correct. Gordon's valuation model or the dividend growth model is used to calculate the price of a share. P0 = D1 / (r-g) where P0 = current price, D1 = next dividend, r = required rate of return, and g = earnings growth rate. Assuming that D1 and g remain constant, an increase in r resulting from an increase in the nominal interest rate will cause Po to decrease.

False is incorrect. A higher interest rate raises the required return of investors, which results in a lower share price.

Chapter 2 Review Questions - Section 2 Answers

7. The statement that "the security is as volatile or risky as the overall market" means a beta of

A. Incorrect. "0" means that the security's return is independent of the market. An example is a risk-free security (e.g., T-Bill).

B. **Correct.** The market beta is 1. This is the beta value of the market portfolio (e.g., Standard & Poor's 500). With a beta value of 1, the security is a volatile or risky as the market (i.e., average risk).

C. Incorrect. The security is twice as volatile or risky, as the market.

D. Incorrect. The security is half as volatile as the market.

8. An estimated earnings per share (EPS) report is released by

A. Incorrect. ESPN is a sports TV channel.
B. Incorrect. HSN is a home shopping network.
C. **Correct.** The firms such as this constantly polls brokerages for their earnings estimates. From that survey, these companies publish a compilation that includes the high, low, and mean prediction for a company's upcoming quarterly and fiscal year results.
D. Incorrect. This is a search engine.

9. Beta measures

A. Incorrect. This defines working capital.
B. Incorrect. This defines net assets.
C. **Correct.** The security's volatility relative to an average security or a securities return over time to that of the overall market.
D. Incorrect. This defines a majority holding.

10. Empirical evidence suggests that factors that are determinants of the Price-Earnings ratio in an ongoing business can include accumulated value of a company's assets less liabilities presuming the assets are sold separately. True or False?

True is incorrect. Empirical evidence seems to suggest the following factors: historical growth rate in earnings, forecasted earnings, average dividend payout ratio, *beta* - the company's systematic (uncontrollable) risk, instability of earnings, financial leverage, other factors such as competitive position, management ability, economic conditions.

False is correct. Accumulated value of a company's assets less liabilities presuming the assets are sold separately is the liquidation value of a business, not as a going concern.

11. _____ is a pragmatic technique that is computed as the market price per share divided by revenue per share.

A. Incorrect. It is the common stock value that is equal to dividend in year one divided by the rate of return less the growth rate.
B. Incorrect. It is the market price per share divided by the dividends per share.

C. Incorrect. This is a ratio used to compare a stock's market value to its book value. It is calculated by dividing the current closing price of the stock by the latest quarter's book value per share.
D. **Correct.** The price-sales (p/s) ratio is an increasingly popular tool for determining underlying stock value. It is computed as: (market price per share) / (sales per share).

12. The price-dividend ratio is

A. Incorrect. This is the reciprocal of the price-sales ratio.
B. **Correct.** The price-dividends (p/d) ratio is one popular tool for determining underlying stock value.
C. Incorrect. This is the price-book (p/b) ratio.
D. Incorrect. This is the price-sales (P/S) ratio.

13. A company has 100,000 outstanding common shares with a market value of 20 per share. Dividends of 2 per share were paid in the current year, and the enterprise has a dividend-payout ratio of 40%. The price-to-earnings (P/E) ratio of the company is

A. Incorrect. 2.5 equals EPS divided by dividends per share.
B. Incorrect. 10 equals share price divided by dividends per share.
C. **Correct.** The P-E ratio equals the share price divided by EPS. If the dividends per share equaled 2 and the dividend-payout ratio was 40%, EPS must have been 5 (2/0.4). Accordingly, the P-E ratio is 4 (20 share price/5 EPS).
D. Incorrect. 50 equals price per share divided by the dividend-payout percentage.

14. Purchase price divided by net operating income is

A. Incorrect. Gross income multiplier is calculated as: Purchase price/gross rental income.
B. **Correct.** Net income multiplier is calculated as: Purchase price/net operating income (NOI). Different properties have different operating expenses, which must be taken into account in determining the value of a property.
C. Incorrect. Capitalization rate is almost the same as the net income multiplier, only used more often. It is the reciprocal of the net income multiplier.
D. Incorrect. This method uses the present value technique under which the asking price or value of a real estate investment is the present worth of the future after-tax cash flows from the investment, discounted at the rate of return required by the investor.