

# STUDY UNIT NINETEEN

## RETURN ON INVESTMENT, PROFITABILITY, AND EARNINGS

19.1	<i>Return on Invested Capital</i>	2
19.2	<i>Profitability Analysis</i>	5
19.3	<i>Earnings-Based Analysis</i>	9
19.4	<i>Core Concepts</i>	12

This study unit is the **fourth of five** on **financial statement analysis**. The relative weight assigned to this major topic in Part 1 of the exam is **25%** at **skill level B** (four skill types required). The five study units are

- Study Unit 16: The Development of Accounting Standards
- Study Unit 17: Financial Statement Assurance
- Study Unit 18: Liquidity, Capital Structure, and Solvency
- Study Unit 19: Return on Investment, Profitability, and Earnings
- Study Unit 20: Other Analytical Issues

After studying the outlines and answering the multiple-choice questions, you will have the skills necessary to address the following topics listed in the IMA's Learning Outcome Statements:

### Part 1 – Section E.5. Return on invested capital

The candidate should be able to:

- a. identify and define the components of return on invested capital
- b. list several uses for the return on invested capital ratio
- c. demonstrate an understanding of the difficulty of defining “invested capital” and “return”
- d. identify and calculate adjustments that should be made to capital and income
- e. calculate and interpret the return on total assets ratio and return on common equity ratio
- f. analyze return on assets and return on equity using the DuPont model
- g. calculate and interpret profit margin and asset turnover and demonstrate an understanding of the relationship between these two ratios
- h. infer the effect on return on assets of a change in one or more elements of the financial statements
- i. disaggregate return on common equity into adjusted profit margin, asset turnover, and leverage and be able to calculate these ratios given financial statement data
- j. calculate and interpret sustainable equity growth and the dividend payout ratio
- k. calculate and interpret return on shareholders' investment

### Part 1 – Section E.6. Profitability analysis

The candidate should be able to:

- a. identify factors to be considered in measuring income, including estimates, accounting methods, disclosure incentives, and the different needs of users
- b. recognize the importance of the source, stability, and trend of revenue
- c. demonstrate an understanding of the relationship between revenue and receivables and revenue and inventory
- d. infer the effect on revenue with changes in revenue recognition and measurement methods
- e. analyze company cost of sales by calculating and interpreting the gross profit margin

- f. interpret changes in gross profit
- g. analyze company expenses using common-size income statements
- h. identify and define the major expense categories for a company, including selling expenses, depreciation expense, maintenance, amortization, general and administrative expenses, financing expenses, and income taxes
- i. infer reasons for increases over time in any of these expenses as a percent of revenue
- j. distinguish between gross profit margin, operating profit margin, and net profit margin, and analyze the effects of changes in the components of each
- k. calculate and interpret book value per share and the operating cash flow to income ratio

### Part 1 – Section E.7. Earnings-based analysis

The candidate should be able to:

- a. identify the determinants and indicators of earnings quality
- b. define earnings persistence and identify its determinants
- c. recast earnings to show persistent earnings for a company, excluding erratic, unusual, and nonrecurring items
- d. demonstrate an understanding of the relationship between accounting data and stock prices
- e. calculate and interpret the fundamental valuation multiples of the price/book ratio and the price/earnings ratio
- f. calculate and interpret basic and diluted earnings per share
- g. define earnings power
- h. calculate and interpret earnings yield, dividend yield, and dividend payout

## 19.1 RETURN ON INVESTED CAPITAL

### 1. Ratios

- a. The **profit margin on sales** equals net income divided by sales.
  - 1) 
$$\frac{\text{Net income after interest and taxes}}{\text{Net sales}}$$
  - 2) The numerator also may be stated in terms of the net income available to common shareholders.
  - 3) Another form of the ratio excludes nonrecurring items from the numerator, e.g., unusual or infrequent items, discontinued operations, extraordinary items, and effects of accounting changes. The result is sometimes called the **net profit margin**. This adjustment may be made for any ratio that includes net income.
    - a) Still other numerator refinements are to exclude equity-based earnings and items in the other income and other expense categories.
- b. The **total asset turnover ratio** equals net sales divided by average total assets.
  - 1) 
$$\frac{\text{Net sales}}{\text{Average total assets}}$$
  - 2) This ratio measures the level of capital investment relative to sales volume.
  - 3) For all turnover ratios, high turnover is preferable because it implies effective use of assets to generate sales.
  - 4) Certain assets, for example, investments, do not relate to net sales. Their inclusion decreases the ratio.

- c. The ratio of **net operating income to sales** may be defined as earnings before interest and taxes (EBIT) divided by sales.
- 1) 
$$\frac{EBIT}{Net\ sales}$$
  - 2) Use of EBIT emphasizes operating results and more nearly approximates cash flows than other income measures.
- d. The **return on investment** or **ROI** (also called **return on total assets** or **return on invested capital**) may be defined in many ways, for example, as net income divided by average total assets.
- 1) 
$$\frac{Net\ income\ after\ interest\ and\ taxes}{Average\ total\ assets}$$
  - 2) The numerator may be defined in various ways. One possibility is net income available to common shareholders, which subtracts preferred dividends. Another numerator adjustment is to add back a minority interest in the income of a consolidated subsidiary when invested capital is defined to include the minority interest. Still another numerator adjustment is to add back interest expense when invested capital equals total debt plus equity capital. A final example is the **basic earning power ratio**, which divides EBIT by average total assets. This ratio enhances comparability of firms with different capital structures and tax planning strategies.
  - 3) The denominator also may be defined in many ways, for example, to include only operating assets. Investments, intangible assets, and the other asset category would be excluded. Other potential definitions of the investment base include adjustments to eliminate unproductive assets (e.g., idle plant), intangible assets, or accumulated depreciation; excluding current liabilities to emphasize long-term capital; excluding debt and preferred stock to arrive at equity capital; and stating invested capital at market value.
  - 4) This ratio tells investors whether management is using invested funds wisely. It also provides a profitability measure relating both to the income statement and the balance sheet that can be adjusted to reflect the contributions of creditors or equity providers. Other uses of this ratio are in forecasting earnings, planning, budgeting, and control.
- e. The **Du Pont equation** relates the return on total assets, the total asset turnover, and the profit margin on sales.
- 1) 
$$\frac{Net\ income\ after\ interest\ and\ taxes}{Average\ total\ assets} = \frac{Net\ sales}{Average\ total\ assets} \times \frac{Net\ income\ after\ interest\ and\ taxes}{Net\ sales}$$
  - 2) This formula emphasizes that ROI may be explained in terms of the efficiency of asset management and the profit margin. The effects of modifying the Du Pont equation to reflect net operating income (EBIT) and operating assets should be understood.
  - 3) The formula above may be multiplied by the **financial leverage ratio** (also known as the equity multiplier or leverage factor) to determine the return on common equity (or on total equity if desired).
- f. The ratio of **net operating income to total capital** is a variation of the return on total assets that excludes noninterest-bearing debt from total assets.
- 1) 
$$\frac{EBIT}{Equity + Interest-bearing\ debt}$$
  - 2) Total capital is defined in the same way as in the section on asset management. A variation is the **marginal profitability rate** (change in EBIT ÷ change in total capital).

- g. The **return on common equity** equals the net income available to common shareholders divided by their average equity.
- 1) 
$$\frac{\text{Net income after interest and taxes} - \text{Preferred dividends}}{\text{Average common equity}}$$
  - 2) The average common equity includes total equity minus the preferred shareholders' capital and any minority interest.
  - 3) This ratio and the next one measure the return on the carrying amount of equity.
  - 4) A variation of the return on common equity is the **marginal return on common equity** (change in net income ÷ change in common equity).
- h. The **return on total equity** equals net income minus dividends on redeemable preferred stock, divided by average total equity.
- 1) 
$$\frac{\text{Net income after interest and taxes} - \text{Dividends on redeemable preferred stock}}{\text{Average total equity}}$$
  - 2) Redeemable preferred stock is usually considered to be equivalent to debt. Indeed, the SEC requires it to be reported separately from other equity.
- i. The **gross margin**, or **gross profit, percentage** equals net sales minus cost of goods sold, divided by net sales.
- 1) 
$$\frac{\text{Net sales} - \text{Cost of goods sold}}{\text{Net sales}}$$
  - 2) A high gross margin implies effective cost control.
  - 3) A change in gross margin implies that the relationship between cost and sales is not static. Management should be concerned about a decline in gross margin because the implication is that price increases are not keeping up with cost increases, or, if fixed costs are significant, that sales volume may be declining.
  - 4) Analysis of costs can extend beyond the gross profit margin. For example, all costs can be compared with sales. Some firms calculate a **labor cost ratio**, which equals labor cost divided by net sales.
    - a) Labor cost is an important determinant of profitability.
    - b) When a cost ratio differs materially from one year to the next, management should analyze and explain the reasons for the change.
    - c) In evaluating a business combination, labor cost and the employment growth rate should be considered in connection with any changes in profitability. In other words, will the presumed reductions in the workforce and in labor cost resulting from the combination produce increased profits?
- j. The **dividend payout ratio** equals dividends per common share divided by EPS.
- 1) 
$$\frac{\text{Dividends per common share}}{\text{EPS}}$$
  - 2) The most conservative version of this ratio uses a diluted EPS amount that excludes nonrecurring items. Firms develop dividend policies based on recurring earnings because they usually prefer a stable pattern of dividends. **Nonrecurring items** are often an adjustment to income when calculating returns on investment. Nonrecurring items include involuntary gains and losses, such as those from storm damage or expropriation of assets.
  - 3) The appropriate ratio depends on the firm's unique circumstances, including shareholder preferences regarding dividend income and capital gains. The general principle, however, is that growth companies have a low payout.
  - 4) A related ratio is the **dividend yield**. It equals dividends per share of common stock divided by the market price per share of common stock.

- k. The **sustainable equity growth rate** is a function of the earnings retained and the return thereon. It equals the return on common equity times one minus the dividend payout rate.
- 1) 
$$\frac{\text{Net income} - \text{Preferred dividends}}{\text{Average common equity}} \times \left( 1 - \frac{\text{Dividends per common share}}{\text{EPS}} \right)$$
  - 2) If the dividend payout rate is held constant, the sustainable equity growth rate will vary directly with the return on common equity.
- l. The **return to shareholders** is what shareholders actually earn over a specified period of years. It equals the sum of dividend yield and capital gains divided by the measurement period.
- 1) 
$$\frac{\text{Dividends} + \text{Capital gains}}{\text{Measurement period}}$$
  - 2) The return to shareholders facilitates comparisons among a wide variety of financial instruments.
- m. The **return on shareholders' investment (ROSI)** equals the sum of dividends per share and the market value per share of earnings reinvested, divided by the price of a share.
- 1) 
$$\frac{\text{Dividends} + \text{Market value of reinvested earnings}}{\text{Share price}}$$
  - 2) Return on common equity is based on carrying amounts in the balance sheet. Thus, ROSI is useful because it permits calculation of the return on the price of a common share, which is often a multiple of the carrying amount of common equity.
  - 3) ROSI assumes that the market value of reinvested earnings equals the recorded amount. If this market value is assumed to exceed the recorded amount, a **shareholder multiple** may be determined as follows (amounts are per share):  

$$\frac{\text{Dividends} + \text{Market value of reinvested earnings}}{\text{Earnings}}$$

## 19.2 PROFITABILITY ANALYSIS

1. **Profitability analysis** must address the many factors involved in measuring the firm's income; the stability, sources, and trends of revenue; revenue relationships; and expenses, including cost of sales. This analysis attempts to answer questions about the relevant income measure, income quality, the persistence of income, and the firm's earning power.
  - a. **Income** equals the sum of revenues and gains minus the sum of expenses and losses.
    - 1) **Estimates** are necessary to calculate income, for example, allocations of revenue and expense over accounting periods, useful lives of assets, and amounts of future liabilities.
    - 2) Income is measured in accordance with a selection from among **generally accepted accounting principles**.

- 3) **Incentives for disclosure** about the income measure vary with the interest group: financial analysts, auditors, accountants, management, directors, shareholders, competitors, creditors, and regulators. The pressures from some groups may lead to suboptimal financial reporting.
- 4) **Users** have different needs, but financial statements are general purpose. For example, investors are interested in profitability, but creditors are interested in security.
- b. **Revenues** are inflows or other enhancements of assets of the firm or settlements of its liabilities from delivering or producing goods, rendering services, or other activities that constitute the firm's ongoing major or central operations.
- c. Understanding the **sources of revenue** is especially important in diversified firms. Common-size analysis is useful when markets and product lines have differing rates of growth, potential, and profitability.
- d. **Trend percentage analysis** and evaluation of **management's discussion and analysis (MD&A)** in the firm's annual report are useful techniques for assessing the persistence of the firm's revenues.
- e. The relationship of **revenues and receivables** helps to assess earnings quality. Thus, if revenues (sales) are growing more slowly than receivables, the analyst should consider management's incentives, the relative leniency of credit policies, and collectibility issues.
- f. The relationship of **revenues and inventories** is also useful. For example, if materials and work-in-process inventories are falling while finished goods inventories are rising, future output and sales are likely to decline.
- g. According to the **revenue recognition principle**, revenue should be recognized when (1) realized or realizable and (2) earned.
  - 1) Revenues are **realized** when goods or services have been exchanged for cash or claims to cash.
  - 2) Revenues are **realizable** when goods or services have been exchanged for assets that are readily convertible into cash or claims to cash.
  - 3) Revenues are **earned** when the earning process has been substantially completed and the entity is entitled to the resulting benefits or revenues.
  - 4) The two conditions are usually met when goods are delivered or services are rendered, that is, at the time of sale, which is customarily the time of delivery.
  - 5) As a reflection of the accounting profession's conservatism, expenses and losses have historically been subject to less stringent recognition criteria than revenues and gains.
    - a) Expenses and losses are not subject to the realization criterion.
    - b) Rather, expenses and losses are recognized when a consumption of economic benefits occurs during the entity's primary activities or when the ability of existing assets to provide future benefits has been impaired.
      - i) An expense or loss may also be recognized when a liability has been incurred or increased without the receipt of corresponding benefits; a probable and reasonably estimable contingent loss is an example.
    - c) Long-lived assets, such as equipment, buildings, and intangibles, are depreciated or amortized over their useful lives. Natural resources are depleted--usually on a units-of-production basis.
  - 6) The following are exceptions to the basic revenue recognition rules:
    - a) Revenues from long-term contracts may be recognized using the **percentage-of-completion method**. This method allows for revenue to be recognized at various stages of the contract although the entire job is not complete.

- b) The **completion-of-production method** is an appropriate basis for recognition if products or other assets are readily realizable, e.g., precious metals and some agricultural products.
    - c) If the collectibility of assets is relatively uncertain, revenues and gains may be recognized as cash is received using the **installment sales method** or the **cost recovery method**.
  - h. Recognition of revenues, expenses, gains, losses, and changes in related assets and liabilities involves, among other things, the application of pervasive expense recognition principles: associating cause and effect, systematic and rational allocation, and immediate recognition.
    - 1) SFAC 6, *Elements of Financial Statements*, defines matching, a term that has been given a variety of meanings in accounting literature, as essentially synonymous with **associating cause and effect**.
      - a) **Matching** “is simultaneous or combined recognition of the revenues and expenses that result directly and jointly from the same transactions or other events.” Such a direct relationship is found when revenue for sales of goods is recognized in the same period as the cost of the goods sold.
    - 2) **Systematic and rational allocation** procedures do not directly relate costs and revenues but are applied when a causal relationship is “generally, but not specifically, identified.”
      - a) This expense recognition principle is appropriate when an asset provides benefits over several periods (its estimated useful life), the asset is used up as a result of events affecting the entity, and the expense resulting from such wastage is indirectly (not directly and traceably) related to specific revenues and particular periods. The usual example is depreciation.
    - 3) **Immediate recognition** is the applicable principle when costs cannot be directly or feasibly related to specific revenues and their benefits are used up in the period in which they are incurred. Utilities expense is a common example.
  - i. Common categories of cost and expense accounts reported in the income statement include **cost of goods sold**, which equals cost of goods manufactured adjusted for the change in finished goods inventory. **Cost of goods manufactured** is equivalent to a retailer’s purchases. It equals all manufacturing costs incurred during the period, plus beginning work-in-process, minus ending work-in-process. It may also be stated as cost of goods sold, plus ending finished goods inventory, minus beginning finished goods.
    - 1) **General and administrative expenses** are incurred for the direction of the enterprise as a whole and are not related wholly to a specific function, e.g., selling or manufacturing. They include accounting, legal, and other fees for services; officers’ salaries; insurance; wages of office staff; miscellaneous supplies; and office occupancy costs.
    - 2) **Selling expenses** are incurred in selling or marketing. Examples include sales representatives’ salaries, rent for sales department, commissions, and traveling expense; advertising; selling department salaries and expenses; samples; and credit and collection costs, including bad debt expenses. Shipping costs are also often classified as selling costs.
    - 3) **Financing (interest) expense** is recognized based on the passage of time. In the case of bonds, notes, and capital leases, the **effective interest method** is used. A typical analytical tool is the calculation of the trend of the average effective interest rate for the firm and comparison with the rates for other firms.

- 4) **Depreciation** is the allocation of the costs of fixed assets to benefited subsequent periods. Usually, the cost of a fixed asset minus salvage or residual value is expensed over the asset's useful life. Because of the noncash nature and relatively fixed amount of depreciation, it is not extremely meaningful except in relation to depreciable assets. This ratio may detect changes in the composite rate.
  - 5) **Amortization** of special costs such as those of intangible assets is usefully analyzed by comparison of trends with respect to revenues, unamortized special costs, and net property and equipment.
  - 6) **Maintenance and repairs expense** varies with the amount of plant and equipment and the extent of output. It also has fixed and variable components and does not vary directly with revenues. Moreover, this expense is discretionary and is therefore a means of smoothing income. Thus, it relates to earnings quality.
    - a) Maintenance is also a factor in estimating assets' useful lives and the calculation of depreciation.
  - 7) **Income tax expense** is an important item in financial statements because of its magnitude. Accrual accounting for income taxes is characterized by interperiod tax allocation that matches tax expense with accrual income. The analysis must be aware of both temporary and permanent tax differences between accrual accounting and tax law.
    - a) Intraperiod tax allocation allocates tax to the components of income (continuing operations, discontinued operations, extraordinary items, and cumulative effect of changes in accounting principles).
    - b) The analysis should extend to comparisons of effective tax rates (expense ÷ pre-tax income) over time.
- j. **Book value per share** equals the amount of net assets available to the shareholders of a given type of stock divided by the number of those shares outstanding.
- 1) 
$$\frac{\text{Equity}}{\text{Shares outstanding}}$$
  - 2) When a company has preferred stock as well as common stock outstanding, the computation of book value per common share must consider potential claims by preferred shareholders, such as whether the preferred stock is cumulative and in arrears or participating. It must also consider whether the call price (or possibly the liquidation value) exceeds the carrying amount of the preferred stock.
  - 3) Book value per share is ordinarily based on historical cost expressed in nominal dollars. Accordingly, it may be misleading because book values ordinarily differ materially from fair market values. Market value is what a stock sells for on the open market. Book value may be materially higher or lower than market value.
- k. The ratio of **operating cash flow to income** measures the extent to which the amount of the firm's net cash flow from its ongoing operations differs from its accrual accounting net income.
- 1) 
$$\frac{\text{Net operating cash flow}}{\text{Net income}}$$
  - 2) Accrual accounting net income reflects many noncash items, e.g., depreciation, accrued expenses for wages and interest, and credit sales. It does not reflect certain cash items, e.g., purchases of assets, borrowings, sales of stock, and dividend payments.



### 19.3 EARNINGS-BASED ANALYSIS

1. **Profitability and earnings ratios** measure earnings relative to some base, for example, productive assets, sales, or capital. Increased profits benefit owners not only because they make additional funds available for dividend payments but also because they may result in appreciation of the firm's stock price. Profits also provide a cushion for debt coverage. Hence, profitability ratios are used by investors, creditors, and others to evaluate management's stewardship of the firm's assets.
  - a. These ratios are based on accounting profits, which may differ from economic profits. **Economic profits** include all explicit and implicit revenues and costs (such as the cost of pollution to society), but **accounting profits** include only the explicit revenues and costs of a single firm.
  - b. **Earnings quality** is the degree to which a firm's earnings represent a reliable measure of its performance.
    - 1) Reported earnings are based on data recognized and measured using the **accrual basis**, not the cash basis, of accounting. For example, revenues are recognized when realizable or realized and earned, and expenses are recognized when the firm's economic benefits are consumed. Accordingly, a firm may record current revenues although receipt of cash will not occur until future periods. It also may defer expenses to future periods although payment of cash has already been made.
    - 2) Thus, earnings quality is a function of the firm's choice of accrual accounting principles, its judgments in the application of those principles, and the risks present in the external business environment. Moreover, the quality of the earnings reported in audited financial statements is subject to **audit risk**, the risk that the auditor may fail to modify his/her opinion on materially misstated financial statements.
      - a) Management may choose from among **generally accepted accounting principles**. Conservative choices are usually regarded as promoting earnings quality. The resulting earnings measures, profitability ratios, and performance forecasts tend to be less optimistic and less likely to require retroactive restatement.
        - i) For example, choosing straight-line, not accelerated, depreciation at the outset of a fixed asset's life produces lower expenses, higher earnings, and more favorable profitability ratios. Similarly, adopting the FIFO, not LIFO, inventory valuation method during periods of rising prices lowers cost of goods sold and increases earnings and the carrying amounts of assets.
        - ii) However, consistent understatement of earnings also results in a bias that misleads investors because it produces information that is not representationally faithful.
        - iii) Consideration of management's choices of accounting principles and their cumulative effect may reveal a tendency to over- or understate earnings.

- b) Management also makes choices about the application of accounting principles that affect earnings. Thus, management can choose to alter the timing of recognition of revenues and expenses without regard to business justification.
    - i) For example, management may defer maintenance, advertising, and R&D costs or expedite sales of appreciated assets. Another source of manipulation is the use of the numerous **estimates** that are an inevitable part of financial reporting. For example, overestimating the useful lives of depreciable or amortizable assets and underestimating uncollectible accounts or the cost of a long-term construction project will overstate earnings.
  - c) **Business risk** is a factor in evaluating earnings quality. Firms that are less susceptible to the effects of external risk factors (the business cycle, resource prices, regulatory changes, unexpected competition, etc.) have high quality earnings. Such firms tend to have earnings that are less variable and therefore more predictable.
- c. **Earnings persistence** is the degree of predictability and stability of the elements, sources, amount, and trend of earnings. The **determinants** of earnings persistence include such factors as the management of earnings and the trend of earnings, variability, and the incentives (e.g., management compensation or firm survival) to achieve persistence. Thus, persistence may be illusory because of income smoothing and other management manipulations. Their effects may conceal the normal fluctuations of a firm's operations. Understanding these fluctuations is necessary to assessing the firm's risk factors.
- 1) Consequently, earnings persistence, especially the predicted trend, is important to an understanding of the response of share prices to financial accounting information. Investors are assumed to use current earnings to help predict future corporate performance. The longer that a dollar of good news in current earnings is expected to persist into the future, the better future performance is. Share prices reflect investors' expectations of future performance, so their response to current good news is greater when the persistence of that good news is greater.
  - 2) Additional revenue from a successful new product, or lower costs attributable to improved operating efficiency, are examples of high persistence items.
  - 3) Items of low persistence include extraordinary items such as gains and losses on disposals of capital assets.
  - 4) Zero-persistence items also exist, for example, the immediate expensing of certain outlays to create intangible assets. Because earnings persistence is an important input into investors' evaluation of the link between current earnings and future firm performance, investors may be misled into overestimating persistence unless low-persistence items in operations are clearly disclosed.
  - 5) **Recasting earnings** is the process of separating persistent from nonpersistent items, i.e., from the **random, erratic, unusual, and nonrecurring items**. Recasting allows separate analysis of nonpersistent items and also helps to isolate current components of earnings that should have been recognized in prior periods. However, this rearrangement does not affect the net income for the period. Moreover, the recasting process ordinarily should be done for a period of at least five years.

- a) Recasting requires knowledge of accounting principles, including those governing financial statement presentation. Primary sources of information are the income statement and its components (continuing operations, discontinued operations, extraordinary items, and the cumulative effect of a change in accounting principle), the balance sheet, the statement of cash flows, the statement of changes in equity, the notes, and management's discussion and analysis (MD&A).
  - b) Recasting rearranges, subdivides, and disaggregates information, e.g., the taxes on items presented net of tax, gains and losses reported in continuing operations, discretionary expenses, and unusual but not extraordinary items.
- 6) **Adjusting earnings** and its elements is the process of moving items to the periods most affected for analytical purposes. These adjustments change net income. Examples of adjustments are the cumulative effect of a change in accounting principle, tax benefits of a carryforward of an operating loss, the effects of the resolution of contingencies such as lawsuits, extraordinary or unusual items, gains or losses on discontinued operations, foreign currency translation adjustments, and gains and losses on available-for-sale securities.
- 7) **Earnings power (earnings coverage)** is the capacity of the firm's operations to produce cash inflows. A predictably stable pattern of earnings is the optimal source of funds for payment of long-term debt and other fixed charges. Furthermore, it enhances the firm's credit standing, allowing it to borrow on favorable terms when its cash balance is low.
- 8) The book value per share is used to calculate the **price-to-book ratio** (also called the **market-to-book ratio**).
- a) 
$$\frac{\text{Market price per share}}{\text{Book value per share}}$$
  - b) Well-managed firms should sell at high multiples of their book value (book value reflects historical cost).
- 9) In accordance with SFAS 128, *Earnings per Share*, **basic earnings per share (BEPS)** equals net income available to common shareholders divided by the weighted-average number of shares outstanding.
- a) 
$$\frac{\text{Net income available to common shareholders}}{\text{Average outstanding shares}}$$
  - b) Net income available to common shareholders is income from continuing operations or net income, minus preferred dividends.
  - c) If the enterprise has dilutive potential common stock outstanding, it must report **diluted earnings per share (DEPS)**.
    - i) DEPS measures the entity's earnings performance during the reporting period, based on both common stock and dilutive potential common stock. DEPS is computed by
      - Increasing the numerator of BEPS for convertible preferred dividends and after-tax amounts of interest related to the potential common stock. The numerator is also adjusted for other changes in income or loss, such as profit-sharing expenses, that would result from the assumed issuance of potential common stock.
      - Increasing the denominator of BEPS for the weighted-average number of shares of common stock that would have been issued if dilutive potential common stock had been issued.

- ii) **Potential common stock** is a security or other contract that may entitle the holder to obtain common stock. Examples include convertible securities (convertible preferred stock and convertible debt), stock options and warrants (and their equivalents), and contingently issuable common stock.
- 10) The **price-earnings (P-E) ratio** equals the market price per share of common stock divided by EPS.
- a) 
$$\frac{\text{Market price per share}}{EPS}$$
- b) Most analysts prefer to use diluted EPS.
- c) Growth companies are likely to have high P-E multiples. A high multiple may also indicate that the firm is relatively low risk or that its choice of accounting methods results in a conservative EPS.
- d) The reciprocal of the P-E ratio is the **earnings yield**. It is the rate of return on the fair value of a share of common stock.
- i) 
$$\frac{EPS}{\text{Market price per share}}$$

## 19.4 CORE CONCEPTS

### Return on Invested Capital

- Return on invested capital is a measure of **the return a company provides** its owners (stockholders) in proportion to the amount of capital the owners have invested in the company.
- The fundamental ratio is return on investment, or **return on total assets**, calculated as net income after interest and taxes divided by average total assets.
- **Return on common equity** equals net income after interest and taxes (minus preferred dividends) divided by average common equity.

### Profitability Analysis

- Many factors are involved in measuring a firm's income: the **stability, sources, and trends of revenue; revenue relationships; and expenses**, including cost of sales.
- **Income** itself can be analyzed from **several perspectives**, including relevant income measure, income quality, the persistence of income, and the firm's earning power.
- Trend percentage analysis and the evaluation of management's discussion and analysis (MD&A) in the firm's annual report are useful techniques for assessing the **persistence of the firm's revenues**.
- **Book value per share** equals the amount of net assets available to the shareholders of a given type of stock divided by the number of shares outstanding.

### Earnings-Based Analysis

- **Profitability and earnings ratios** measure earnings relative to some base, for example, productive assets, sales, or capital.
- Increased profits benefit owners not only because they make **additional funds available for dividend payments** but also because they may result in **appreciation of the firm's stock price**.
- **Earnings quality** is the degree to which a firm's earnings represent a reliable measure of its performance.
- **Earnings persistence** is the degree of predictability and stability of the elements, sources, amount, and trend of earnings.
- **Earnings power** (earnings coverage) is the capacity of a firm's operations to produce cash inflows.
- The **price-earnings (P-E) ratio** equals the market price per share of common stock divided by earnings per share.