CHAPTER 17
Earnings per Share and Retained Earnings

OBJECTIVES

After reading this chapter, you will be able to:

1. Compute basic earnings per share (EPS).
2. Understand how to compute the weighted average common shares for EPS.
3. Identify the potential common shares included in diluted EPS.
4. Apply the treasury stock method for including share options and warrants in diluted EPS.
5. Calculate the impact of a convertible security on diluted EPS.
6. Compute diluted EPS.
7. Record the declaration and payment of cash dividends.
8. Account for a property dividend.
9. Explain the difference in accounting for small and large stock dividends.
10. Understand how to report accumulated other comprehensive income.
11. Prepare a statement of changes in stockholders' equity.
SYNOPSIS

Earnings and Earnings Per Share

1. The primary components of net income are income (loss) from continuing operations, results from discontinued operations and extraordinary gains and losses.

Overview and Uses of Earnings per Share Information

2. External decision makers often consider earnings per share to be the best single measure for summarizing a corporation's performance. Earnings per share information is useful in evaluating the return on investment and risk of a company. Earnings per share can be used to predict future cash flows per share, to compare intercompany performance using the price/earnings ratio, and to indicate the potential impact of the issuance of common stock options, convertible debt, or convertible preferred stock on future earnings per share.

Basic Earnings Per Share

3. A simple capital structure consists of only common stock. For a simple capital structure, basic earnings per share is required for reporting purposes and is computed using the following equation:

\[
\text{Basic Earnings per Share} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Weighted Average Number of Common Shares Outstanding}}
\]

Basic earnings per share is reported on a corporation's income statement directly below net income. Preferred dividends are removed from this calculation because basic earnings per share consist of only the earnings available to common stockholders. The preferred dividends are dividends on noncumulative preferred stock that have been declared and the current dividends on cumulative preferred stock whether or not they have been declared.

4. The weighted average number of common shares outstanding is the number of common shares outstanding at the end of the accounting period if no shares have been issued or reacquired during the year. If a corporation has issued or reacquired shares of common stock, a weighted average of these shares must be calculated. The result is the total weighted average common shares. The weighted average number of common shares must also be adjusted for stock dividends and stock splits, which are assumed to have occurred at the beginning of the earliest comparative period. For example, if comparative information on earnings per share is being presented for 2011 and 2012, any stock split or stock dividend that occurs in 2011 or 2012 is assumed to have occurred as of the beginning of 2011. The corporation discloses the weighted average number of common shares used in the basic EPS calculation in the notes to its financial statements.

5. A corporation reports separate earnings per share for income from continuing operations and net income. If there are any results from discontinued operations or extraordinary items, separate earnings per share are shown for each of these items. Each component of earnings per share is based on the same weighted average number of shares. A corporation may report earnings per share for each of the aforementioned items on the income statement in a schedule directly below the net income or in the notes to the financial statements. When reported on the income statement, the components are summed to show the contribution of each income statement item to the total earnings per share.
Diluted Earnings Per Share

6. When a corporation has a complex capital structure, basic earnings per share and diluted earnings per share must be reported on the face of the income statement. A complex capital structure includes potential common shares that can be used by the holder to acquire common stock. Potential common shares include stock options and warrants, convertible preferred stocks and bonds, participating securities and two-class stocks, and contingent shares.

7. Diluted earnings per share shows the earnings per share after including all potential common shares that would reduce earnings per share. A corporation may include a potential common share in the earnings per share calculation only when it has a dilutive effect for that particular period. In order to evaluate the dilutive effect of each security, the potential common shares must be included in the diluted earnings-per-share (DEPS) calculation in a particular order. The following sequence should be used: (a) compute the basic earnings per share; (b) include dilutive stock options and warrants, and compute a tentative DEPS; (c) develop a ranking of each convertible preferred stock and convertible bond on DEPS; (d) include each dilutive convertible security in DEPS in a sequential order based on the ranking and compute a new tentative DEPS; and (e) select as the diluted earnings per share the lowest computed tentative DEPS. Exhibit 17-1 in the main textbook provides a useful flowchart of the earnings per share computations.

8. Stock options and warrants are always considered first in the diluted earnings per share calculations and are included in diluted earnings per share only if they are dilutive. A corporation uses the treasury stock method to determine the impact of the options and warrants upon the number of common shares. It computes the impact on the assumption that the options were exercised at the beginning of the period (or at the time of the issuance, if later), and that the assumed proceeds obtained from the exercise were used to reacquire common stock at the average market price during the period. If the assumed shares issued exceed the assumed shares reacquired, the effect is a dilution of earnings per share. This occurs whenever the average market price is greater than the option price. The incremental shares resulting from the assumed exercise of the options or warrants are then added to the denominator of the basic earnings per share and used to compute diluted earnings per share. The original numerator is used. The resulting diluted earnings per share is final if no convertible securities are outstanding.

9. Convertible securities are considered for inclusion in diluted earnings per share after stock options and warrants and are included only if dilutive. A corporation evaluates convertible securities in a specified sequence to avoid including a security that is antidilutive in combination with other securities. In order to develop a ranking of the impact of each convertible security on DEPS, the if-converted method is used. Each convertible security is assumed to have been converted into common shares, and then by dividing the resulting increase in the numerator of the earnings-per-share equation by the resulting increase in the denominator, a numerical value is calculated to use in ranking the impact on diluted earnings per share. The security with the lowest numerical impact causes the greatest decrease in diluted earnings per share and is the most dilutive. Beginning with the convertible security having the lowest numerical impact on DEPS, a corporation includes each security in a tentative diluted earnings per share calculation until the tentative diluted earnings per share is less than the numerical impact of the next convertible security in the ranking. The final diluted earnings per share is the last tentative figure.

Additional Considerations

10. The computation of earnings per share includes the current conversion ratios for convertible securities and stock options, adjusted proportionally for stock dividends or stock splits.
11. Some contingent issuances of common stock are dependent on the satisfaction of certain conditions such as attaining or maintaining a certain level of earnings. A corporation considers these shares outstanding for basic and diluted earnings per share when the conditions have been met, and if dilutive, includes them in diluted earnings per share even if the conditions are not yet met.

12. Disclosure of both basic and diluted earnings per share is required on the income statement. In addition, a schedule or note explains the bases on which both basic and diluted earnings per share are calculated, identifies all potential common shares whether included in the diluted earnings per share computation or not, identifies the amount of preferred dividends, and describes the impact on the common shares outstanding of transactions subsequent to the end of the accounting period.

Content of Retained Earnings

13. Retained earnings is the section of stockholders’ equity that summarizes the lifetime income of the corporation that it has retained for use in the corporation and not distributed to stockholders in the form of dividends. Retained earnings link the income statement with the balance sheet. The main items affecting retained earnings are: net income, dividends, retrospective and prior period adjustments, and appropriations.

Dividends

14. The corporate board of directors is responsible for establishing a dividend policy including the amount, timing, and type of dividends to be declared. In decisions regarding dividends, the board must take into consideration the articles of incorporation, applicable state regulations for dividends, the impact upon legal capital, any restrictions due to a contractual agreement, as well as the financial well-being of the corporation. Generally, a corporation may not declare a dividend if retained earnings has a prior deficit (a negative retained earnings balance). The types of dividends that it may declare include cash, property, scrip, stock, and liquidating dividends. Each of these types of dividends can be classified according to its impact on the corporate capital structure as follows:

A. Cash, property, and scrip dividends decrease retained earnings (and stockholders’ equity).
B. Liquidating dividends decrease contributed capital (and stockholders’ equity).
C. Stock dividends decrease retained earnings and increase contributed capital (no change in stockholders’ equity).
D. Stock splits do not affect the balance of any element of stockholders’ equity.

15. Unless stated otherwise, the term "dividend" refers to a cash dividend, the most common type of dividend. Four significant dates are associated with cash dividends as well as all other types of dividends. On the date of declaration of a dividend, the board of directors creates a legal liability when it formally declares that a dividend will be paid to stockholders of record on a specific future date. Stock sold after the date of declaration sells "with dividends attached" (at a higher market price that includes the amount of the future dividend payment) until the ex-dividend date when the stock begins selling without the declared dividend. The date of record falls several days after the ex-dividend date to allow the stockholders' ledger to be updated. All stockholders listed in the ledger as of the date of record are eligible to receive the dividend. A corporation makes a memorandum entry at this time indicating that the date of record has been reached and listing the future dividend payment date. On the date of payment, the corporation issues the dividend checks and distributes them to stockholders.

16. Preferred stock may be fully participating or partially participating. Fully participating preferred stock shares equally with common stock in any extra cash dividends. The extra dividends are distributed proportionally based on the respective total par values of each class of stock. Partially participating preferred stock is limited in its participation in extra cash dividends to a fixed rate or amount per share.
17. A **property dividend** is payable in assets other than cash and typically takes the form of marketable securities held in other companies. This type of dividend is a nonreciprocal nonmonetary transfer to owners (a one-way nonmonetary exchange). On the date of declaration, the corporation revalues the asset to be distributed to its fair value, recognizes a gain or loss, and records the liability.

18. When a corporation has adequate retained earnings to meet the legal requirements of paying a current cash dividend but does not have sufficient funds to pay the dividend, it may issue a **scrip dividend**. A scrip dividend is a promissory note to pay a dividend at some future date and may include interest. The corporation records the dividend liability on the date of declaration and accrues interest expense until the date of payment. On the payment date, the corporation must record the interest paid as an expense separately from the dividend. The classification of Scrip Dividends Payable on the balance sheet is dependent on the expected maturity date. Scrip dividends are rare.

19. A corporation may declare a **stock dividend** by issuing shares of its own stock to the stockholders on a pro rata (proportional) basis according to the number of shares each stockholder already owns. In an ordinary stock dividend, it issues shares of the same class of stock (e.g., common stock dividend on common stock outstanding), while in a special stock dividend it issues a different class of stock (e.g., common on preferred or preferred on common). The corporation distributes no assets in a stock dividend. Each stockholder maintains the same percentage ownership, and the only change in stockholders' equity is a rearrangement of certain stockholders' equity accounts depending on whether the stock dividend is "large" or "small."

20. A stock dividend that is less than 20% to 25% of the previously outstanding shares and is presumed to have no apparent effect on the market price per share is defined as a **small stock dividend**. A small stock dividend reduces (debits) Retained Earnings by an amount equal to the fair value of the additional shares issued, and increases (credits) Common Stock to Be Distributed for the par or stated value, and credits the excess of the fair value over the par (stated) value to Additional Paid-in Capital From Stock Dividend. Common Stock to Be Distributed is not a liability but a component of Contributed Capital until the corporation issues the stock dividend and eliminates the account.

21. A **large stock dividend**, or a stock split effected in the form of a dividend, is similar in nature to a stock split because of the resulting decrease in the market price per share. Therefore, it is recommended that only the par or stated value (the minimum amount legally required to be capitalized) be debited to Retained Earnings and credited to Common Stock to Be Distributed when the dividend is declared. While this is theoretically inconsistent with the notion that a stock dividend is a distribution of earnings and should be based on the fair value, the use of par value with large stock dividends is still a generally accepted accounting principle.

22. **Liquidating dividends** represent a return of contributed capital and may occur when a corporation is ceasing operations, reducing its size, or when a natural resources corporation pays a dividend based on earnings before depletion. A corporation records the normal portion of a dividend that is, in part, a liquidating dividend as a reduction in retained earnings, and records the liquidation portion as a reduction of contributed capital. The corporation should disclose the liquidating dividend in a note to its financial statements so that stockholders realize that a portion of contributed capital is being returned.

**Prior Period Adjustments (Restatements)**

23. Errors in previously issued financial statements discovered in a later period may arise due to mathematical errors, oversights, incorrect use of existing facts, or mistakes in the applications of accounting principles. Correction of all such material errors, as well as changes in accounting principles, and a change in accounting entity, are treated as **prior period adjustments (restatements)** of retained earnings. A corporation records a prior period adjustment (net of income taxes) as an adjustment of the beginning balance of retained earnings. If comparative financial statements are presented, the corporation makes corresponding adjustments to its net income, retained earnings, and asset or liability account balances for all the periods reported therein.
Restrictions (Appropriations) of Retained Earnings

24. An appropriation (or restriction) of retained earnings means that a corporation's board of directors restricts retained earnings or makes a portion of retained earnings unavailable for dividends. The appropriation may be made to meet legal requirements, to meet contractual requirements, or because of discretionary actions.

25. Most corporations disclose an appropriation of retained earnings by reporting the restrictions in a note accompanying the financial statements or a parenthetical note in stockholders' equity. When a note to the financial statements is used to disclose restrictions, a clear description of the legal, contractual, or discretionary provision and the amount of the appropriation is required.

Statement of Retained Earnings

26. A corporation may report changes in retained earnings in a separate statement of retained earnings, in the statement of changes in stockholders' equity, or as a supporting schedule directly beneath the income statement. A retained earnings statement usually includes only adjustments to retained earnings for net income and dividends.

27. A corporation's other comprehensive income (loss) might include four items: (1) unrealized increases (gains) or decreases (losses) in the market (fair) value of investments in available-for-sale securities, (2) translation adjustments from converting the financial statements of a company's foreign operations into U.S. dollars, (3) certain gains and losses on "derivative" financial instruments, and (4) certain pension liability adjustments. A corporation includes its other comprehensive income (or loss) accumulated to date in its accumulated other comprehensive income (or loss) amount, which it reports in the stockholders' equity section of its balance sheet.

Miscellaneous Changes in Stockholders' Equity

28. On certain occasions, a corporation may increase stockholders' equity for events not related to the issuance of stock or to retained earnings. Examples are donated capital arising from donated assets and the discovery value of previously unknown valuable natural resources.

29. A corporation discloses the changes in the different classes of common stock, additional paid-in capital, retained earnings, accumulated other comprehensive income and treasury stock in its annual report. This information helps users of financial statements in assessing financial flexibility, profitability, and risk. Disclosure may be made parenthetically or in a note to the financial statements. Many corporations satisfy the disclosure requirements by including the changes in a statement of changes in stockholders' equity that must be presented as a major financial statement when the corporation uses it to report comprehensive income.
SELF-EVALUATION EXERCISES

True-False Questions

Determine whether each of the following statements is true or false.

1. Earnings per share for a company with a simple capital structure is calculated by dividing net income less preferred dividends by the number of shares outstanding at year-end.
   Answer: False
   Earnings per share for a company with a simple capital structure is calculated by dividing net income less preferred dividends by the weighted average number of common shares outstanding at year-end. The weighted average common shares outstanding is used because it represents the entire year, which is when the company earned its net income and not just an arbitrary point in time such as the year-end.

2. A corporation includes current dividends on cumulative preferred stock in the numerator when calculating basic earnings per share whether or not they have been declared.
   Answer: True
   A corporation includes the current dividends on cumulative preferred stock in the numerator when calculating basic earnings per share whether or not they have been declared. This is because these dividends must be paid before any of the earnings will be available to the common shareholders. Noncumulative preferred dividends are only included if they have been declared. This is because a company is not required to pay any dividends missed on noncumulative preferred shares before paying dividends to common shareholders.

3. A corporation must consider the impact of all potential common shares in computing diluted earnings per share.
   Answer: True
   Diluted earnings per share reflect a “what-if” scenario, by showing how earnings per share could be affected if options and convertible securities were converted into common shares. Therefore, a corporation must consider the impact of all potential common shares in computing diluted earnings per share.

4. Stock options are always included in diluted earnings per share calculations.
   Answer: False
   Stock options are always considered when calculating diluted earnings per share but they are not included in the calculation if the average market price is less than the exercise price. In this situation, the options would be antidilutive, meaning that they would cause basic earnings per share to rise. It is also unrealistic to expect that these options would be exercised because an option holder would be paying more to exercise the option than they would if they just purchased the stock in the open market.
5. The convertible security with the highest numerical-value impact is considered first in computing diluted earnings per share.  
Answer: False  
The lower the numerical value impact, the greater the decrease in diluted earnings per share; therefore, the convertible security with the highest numerical value impact is considered last, not first, when calculating diluted earnings per share.

6. Corporations with complex capital structures must present basic and diluted earnings per share if they have dilutive potential common shares.  
Answer: True  
A corporation that has a complex capital structure is required to report two earnings per share amounts on the face of the income statement: basic earnings per share and diluted earnings per share.

7. Contingent issuances of common stock that are dilutive are considered outstanding for diluted earnings per share calculations even if the conditions on which issuance are contingent have not been met to date.  
Answer: True  
Contingent common shares are included in diluted earnings per share even if the conditions they are contingent on have not been met. If the contingent conditions have been met, then the prospective shares are included in both the basic and diluted earnings per share.

8. Dividend distributions are limited to the stockholders of record on the date of declaration of a dividend.  
Answer: False  
Stockholders do not have to own the shares on the date of declaration to be entitled to the dividend. Only investors listed in the stockholders’ ledger on the date of record can receive the dividend.

9. Stocks are sold "with dividends attached" from the date of declaration until the date of record.  
Answer: False  
Stocks are sold "with dividends attached" from the date of declaration until the ex-dividend date. The ex-dividend date is usually several days before the date of record.

10. A corporation records all stock dividends, like stock splits, at par value.  
Answer: False  
A corporation records a stock dividend in one of two ways, based on the size of the stock dividend. Large stock dividends (greater than 20% to 25% of the previously outstanding shares) are recorded at par value. Small stock dividends are recorded at the fair value of the shares issued.

11. Liquidating dividends are a return of capital rather than a return on capital, and therefore, total stockholders’ equity is reduced.  
Answer: True  
A liquidating dividend is a return of capital as opposed to return of capital and do cause the amount of stockholders’ equity to be reduced. It is a form of withdrawing capital from the corporation.

12. Dividends always increase or decrease total stockholders’ equity.  
Answer: False  
Dividends usually decrease stockholders’ equity; however, if a company issues a stock dividend, the amount of total stockholder’s equity will not change; just the way stockholders’ equity is configured will change.
13. Property dividends usually result in a gain or loss for the company.  
   **Answer: True**
   When property dividends are declared, the amount of dividends payable is the fair value of the property on the declaration date. Because this is probably not the same amount the property is carried on the books, either a gain or a loss will be recognized by the corporation.

14. The appropriation of retained earnings restricts the use of specific assets in the amount of the appropriation.  
   **Answer: False**
   A restriction of retained earnings means that the board of directors establishes a formal policy that a portion of the retained earnings is unavailable for dividend payments. It does not directly restrict any assets or the use of those assets.

15. An appropriation of retained earnings makes a portion of retained earnings available for dividends.  
   **Answer: False**
   An appropriation of retained earnings is the same as a restriction of retained earnings. If retained earnings are appropriated, it means that the portion appropriated is not available to be paid as dividends.

16. Disclosure of changes in the elements of stockholders’ equity is optional under U.S. generally accepted accounting principles but required under international accounting standards.  
   **Answer: False**
   Under GAAP, corporations must disclose changes to the accounts that make up stockholders’ equity. Similar requirements exist under international accounting standards.

17. Accumulated other comprehensive income is reported as a category of retained earnings.  
   **Answer: False**
   Accumulated other comprehensive income is a separate component of stockholders’ equity, not retained earnings.
1. Bright Corporation reported net income of $34,400 in 2011. The company declared dividends of $4,000 on preferred stock and $12,000 on common stock. At the beginning of 2011, there were 8,000 shares of common stock outstanding. An additional 2,000 shares of common stock were issued on June 30 and another 2,000 shares were added on October 1. In 2011, the basic earnings per share was:

(a) $2.53.
(b) $3.20.
(c) $1.94.
(d) $3.62.

**Answer:** (b) $3.20.

Basic earnings per share equals net income less preferred dividends divided by weighted average number of common shares outstanding. Net income minus preferred dividends is $30,400 ($34,400 − $4,000). From January 1 to June 30 (6 months) there were 8,000 shares outstanding; therefore, 6/12 of 8,000 is 4,000 and this is the weighted average common shares for the first 6 months of 2011. On June 30, 2,000 more shares were issued; therefore, from July 1 to September 30 (3 months) there were 10,000 (8,000 + 2,000) shares outstanding. The weighted average shares outstanding for this period is 2,500 (10,000 x 3/12). On October 1, 2,000 more shares were issued; therefore from October 1 to December 31 (3 months) there were 12,000 (10,000 + 2,000) shares outstanding. The weighted average shares outstanding for this period is 3,000 (12,000 x 3/12). Adding these figures up we get a total weighted average common shares outstanding for the year of 9,500 (4,000 + 2,500 + 3,000). Therefore, the basic earnings per share is $3.20 ($30,400 ÷ 9,500).

Answer (a) is incorrect because it uses 12,000 as the denominator for the EPS calculation. While this is the number of shares outstanding at the end of the year, all of these shares were not outstanding the whole year and should not be given a portion of the net income for the period they were not outstanding. Answer (c) is incorrect because it subtracts the $12,000 dividends paid to the common shareholders before calculating EPS. Dividends to common stockholders are not excluded from this calculation, only dividends to preferred stockholders. Answer (d) is incorrect because it does not subtract preferred dividends declared from the numerator. Preferred dividends that have been declared are removed because this amount of net income is not available to the common stockholders and should not be included in EPS.
2. A company had 20,000 shares of common stock outstanding on January 1; on May 1, 4,000 shares were issued; on July 17, a 20% stock dividend was issued; and on September 1, 3,000 additional shares were issued. The denominator to be used to compute earnings per share is:
(a) 31,800.
(b) 28,400.
(c) 28,200.
(d) 23,667.

Answer: (c) 28,200.

The denominator used to compute earnings per share is weighted average common shares outstanding. To complete this calculation you start with the beginning balance of common shares outstanding and then add as shares are added through dividends or issuance or subtract as shares are purchased or retired. From January to May 1 we had the beginning balance of 20,000 shares outstanding. From May to July 17 we had 24,000 shares outstanding. On July 17 we had a 20% stock dividend. Stock dividends and stock splits are given retroactive treatment, which means we must apply the 20% to both the beginning balance and the May 1 issuance. So from January to May 1 we had 24,000 shares outstanding (20,000 x 120% for the 20% dividend) and from May 1 to September 1 we had 28,800 shares outstanding (24,000 from beginning balance + 4,800 (4,000 x 120%)). We then must add the 3,000 shares issued on September 1 and the amount outstanding for the last part of the year is 31,800. But this is not the weighted average outstanding. To determine the weighted average we must adjust each of these amounts by the amount of time they were outstanding. From January 1 to May 1 the weighted amount of shares is 8,000 (24,000 share outstanding x 4/12 because the period is 4 of the 12 months of the year). From May 1 to September 1 the weighted amount of shares is 9,600 (28,800 share outstanding x 4/12). From May 1 to September 1 the weighted amount of shares is 10,600 (31,800 share outstanding x 4/12). Therefore, the total weighted average common shares outstanding for the year is 28,200 (8,000 + 9,600 + 10,600).

Answer (a) is incorrect because it is the total amount of shares outstanding at the end of the year but does not take into account how long the new shares issued were actually outstanding. Answer (b) is incorrect because it applies the 20% stock dividend to the 3,000 shares issued on September 1. The shares issued after the July 17 dividend are not entitled to that dividend. Answer (d) is incorrect because it does not reflect the 20% dividend issued on July 17.
3. A corporation has 12,000 common shares and options to purchase 1,500 common shares at $10 per share outstanding the entire year. The average market price for the common stock during the year was $15 per share. In calculating the diluted earnings per share using the treasury stock method, the stock option would:
(a) have an antidilutive impact on earnings per share because the assumed shares reacquired exceeds the assumed shares issued.
(b) have an antidilutive impact on earnings per share because the assumed shares issued exceeds the assumed shares reacquired.
(c) have a dilutive impact on earnings per share because the assumed shares issued exceeds the assumed shares reacquired.
(d) have a dilutive impact on earnings per share because the assumed shares reacquired exceeds the assumed shares issued.

**Answer: (c)** have a dilutive impact on earnings per share because the assumed shares issued exceeds the assumed shares reacquired.

The options have a dilutive effect because the average market price ($15) is greater than the exercise price ($10). Under the treasury stock approach, it is assumed that the cash received when the options are exercised ($15,000 = 1,500 options x $10 exercise price) will be used to purchase shares at the average market price. Therefore, we will issue 1,500 shares and acquire only 1,000 shares ($15,000 proceeds from exercising options ÷ $15 per share average market price). Therefore, the denominator of the earnings per share calculator will increase and earnings per share will decrease.

Answer (a) is incorrect because the assumed shares issued are not less than the assumed shares reacquired. Answer (b) is incorrect because it correctly states that the assumed shares issued exceed the assumed shares reacquired, but incorrectly states that this is antidilutive when in fact it is dilutive. Answer (d) is incorrect because it does not reflect the 20% dividends paid on July 17.

4. The diluted earnings per share calculation includes:
(a) all dilutive and antidilutive potential common shares.
(b) all dilutive and antidilutive convertible securities.
(c) only potential common shares that are dilutive.
(d) any convertible security that is antidilutive.

**Answer: (c)** only potential common shares that are dilutive.

Only potential common shares that are dilutive are included in the diluted earnings per share calculation.

Answers (a), (b), and (d) are all incorrect because they each include antidilutive shares in the calculation. Only dilutive potential shares are included. Antidilutive shares are excluded from the calculation.

5. ABC Corporation has a complex capital structure. Its basic earnings per share for the 2011 fiscal year was $2.03 and its diluted earnings per share was $1.98. Rules for financial statement disclosure require that:
(a) only the diluted earnings per share be disclosed.
(b) only the basic earnings per share be disclosed.
(c) neither earnings per share amount be disclosed.
(d) both the basic and the diluted earnings per share be disclosed.

**Answer: (d)** both the basic and the diluted earnings per share be disclosed.

A corporation with a complex capital structure is required to report two earnings per shares (basic and diluted) on the face of the income statement.

Answer (a) is incorrect because it does not state that the basic earnings per share be disclosed. Answer (b) is incorrect because it does not state that diluted earnings per share be disclosed. Answer (c) is incorrect because it does not require the disclosure of either earnings per share amount.
6. Stang Inc., which presents comparative 2011 and 2012 income statements, issued a 2-for-1 stock split on December 31, 2012, increasing the number of common shares from 5,000 to 10,000. When calculating the earnings per share for the 2012 financial statements, the stock split is assumed to have occurred on:
   (a) January 1, 2011.
   (b) January 1, 2012.
   (c) December 31, 2011.
   (d) December 31, 2012.

   **Answer:** (a) January 1, 2011.

   When calculating the earnings per share amount, a split or stock dividend is given retroactive recognition for all periods of the comparative financial statements that are presented. Even though the stock split occurs on December 31, 2012, because Stang, Inc. is presenting 2011 and 2012 income statements, the stock split must be carried back to the beginning of the periods presented, which is January 1, 2011.

   Answers (b), (c), and (d) are all incorrect because they do not carry back the split to the beginning of the 2011 income statement, which is the oldest comparative statement presented.

7. Using the information in question 6 and assuming no additional shares of stock were issued in 2011 or 2012, the weighted average shares of common stock used in calculating EPS for the financial statements on December 31, 2011, would be:
   (a) 5,000 shares for 2011, and 10,000 shares for 2012.
   (b) 5,000 shares for 2011, and 5,000 shares for 2012.
   (c) 10,000 shares for 2011, and 10,000 shares for 2012.
   (d) 10,000 shares for 2011, and 20,000 shares for 2012.

   **Answer:** (c) 10,000 shares for 2011, and 10,000 shares for 2012.

   Because the question makes the assumption that there were no new shares issued in 2011 and 2012, the only item affecting the number of shares would be the 2-for-1 stock split on December 31, 2012, which increased shares from 5,000 to 10,000. In splits and stock dividends, the split is given retroactive recognition for all of the comparative statements presented. This means that the 10,000 shares after the split will be the amount of shares used for both 2011 and 2012 income statements.

   Answer (a) is incorrect because it does not reflect the split on the 2011 income statement as required. Answer (b) is incorrect because it does not reflect the split on both the 2011 and 2012 income statements. Answer (d) is incorrect because it increases the 2012 total to 20,000 when the correct amount should be 10,000.

8. Cash dividends, property dividends, and scrip dividends are examples of dividends that:
   (a) decrease total stockholders' equity by decreasing contributed capital.
   (b) have no effect on total stockholders' equity but decrease retained earnings and increase contributed capital.
   (c) have no effect on any element of stockholders' equity.
   (d) decrease total stockholders' equity by decreasing retained earnings.

   **Answer:** (d) decrease total stockholders' equity by decreasing retained earnings.

   Cash dividends, property dividends, and scrip dividends are paid to stockholders from retained earnings; therefore, when these dividends are declared retained earnings is debited (decreased) and a liability (dividends payable) credited. This results in a decrease in stockholders' equity by decreasing retained earnings. When paid, these dividends cause a reduction in asset accounts.

   Answer (a) is incorrect because cash dividends, property dividends, and scrip dividends do not decrease contributed capital. Answer (b) is incorrect because there is no increase in contributed capital when cash dividends, property dividends, and scrip dividends are paid to shareholders. Answer (c) is incorrect because these dividends cause a reduction in retained earnings.
9. When a corporation declares dividends, a liability is created except when the dividends declared are:
   (a) stock dividends.
   (b) cash dividends.
   (c) property dividends.
   (d) scrip dividends.
   **Answer: (a) stock dividends.**
   As noted in question 8 above, cash dividends, property dividends, and scrip dividends all create a liability when declared. However, when a company declares stock dividends, the credit is to an account called common shares to be distributed that is a temporary stockholders' equity account.
   Answers (b), (c), and (d) are all incorrect because they each create a liability called dividends payable when they are declared.

10. A corporation issues 7,500 shares of capital stock as a dividend in an effort to reduce retained earnings. Before the dividend, 50,000 shares were authorized, 40,000 shares were issued, and 15,000 shares were held in the treasury. The dividend would be accounted for as a:
   (a) small stock dividend.
   (b) large stock dividend.
   (c) stock split.
   (d) property dividend.
   **Answer: (b) large stock dividend.**
   To be considered a large stock dividend, the dividend issued must be more than 20% to 25% of the previously outstanding shares. In this case the company had authorized 50,000 shares but had only issued 40,000 of these shares. In addition, of the 40,000 shares issued, 15,000 had been reacquired as treasury stock. This means that only 25,000 (40,000 − 15,000) of the shares were outstanding before the dividend was declared. Because the dividend is equal to 30% (7,500 ÷ 25,000) of the previously outstanding shares, it is considered a large dividend.
   Answer (a) is incorrect because to be considered a small dividend, the new shares issued must be less than 20% to 25% of the previously outstanding shares. Remember that treasury shares are not outstanding. Answer (c) is incorrect because while a stock split can be considered a form of a stock dividend, it does not reduce retained earnings. Answer (d) is incorrect because a property dividend is when a corporation gives to stockholders property that the corporation holds. In most circumstances, property dividends are in the form of stock in another corporation that the company owns. A property dividend cannot be stock of the corporation issuing the dividend.

11. A board of directors may appropriate retained earnings for all of the following reasons except:
   (a) to meet legal requirements.
   (b) because of discretionary actions.
   (c) to meet contractual obligations.
   (d) to meet dividends on preferred stock.
   **Answer: (d) to meet dividends on preferred stock.**
   A company will appropriate (or restrict) retained earnings to indicate that these earnings are not available for distribution as dividends. All of the other reasons listed are appropriate reasons to restrict retained earnings.
   Answers (a), (b), and (c) are all appropriate uses of restricting retained earnings and are therefore incorrect answers to the question.
12. Other comprehensive income (loss) may include all of the following except:

(a) certain pension liability adjustments.
(b) a translation adjustment from converting the financial statement of a company’s foreign operations into U.S. dollars.
(c) unrealized gain in the fair value of investments in trading securities.
(d) losses on "derivative" financial instruments.

Answer: (c) unrealized gain in the fair value of investments in trading securities.

An unrealized gain in the fair value of investments in trading securities is reported in the income statement and is not considered to be other comprehensive income. Unrealized gains in the fair value of investments in available for sale securities, on the other hand, would be considered other comprehensive income.

Answers (a), (b), and (d) are all incorrect because they are each examples of other comprehensive income that is reported in the stockholders’ equity section of the balance sheet.

Problem-Solving Strategies

Earnings Per Share (EPS)

Corporations are required to disclose EPS information. This information is required to be disclosed on the face of the income statement. In general, there are two types of EPS: 1) Basic and 2) Diluted.

Basic EPS

A company that only has common stock or common stock and nonconvertible preferred stock is said to have a simple capital structure. These companies are required to report basic EPS, which is calculated as follows:

\[
\text{Basic Earnings per Share} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Weighted Average Number of Common Shares Outstanding}}
\]

Notice that in the numerator preferred stock dividends are subtracted from net income. This is because only the earnings available to the common shareholders are included in EPS. However, one of two conditions has to be met to use preferred dividends in the EPS calculation: 1) the dividends have been declared and relate to noncumulative preferred stock, or 2) the dividends relate to cumulative preferred stock (regardless of whether they have been declared). The reason that cumulative preferred stock dividends are subtracted even if they have not been declared is that these dividends must be paid before any of the earnings will be available to common shareholders as dividends. The same is not true for noncumulative preferred stock, so if they have not been declared they will not be included in the EPS calculations.

Eikner Corporation had net income in 2011 of $132,000. The company had two issues of preferred stock outstanding. The first was 1,000 shares of 7%, $50 par value cumulative preferred stock. The second was 1,500 shares of 8%, $100 par value noncumulative preferred stock. Dividends have not been declared in 2011 for either of the preferred stock issuances. Assume that the weighted average common shares outstanding for the year are 33,000 (we’ll learn how to calculate this figure soon). What is the EPS for 2011?
Strategy: If dividends have not been declared, the type of preferred dividend will make a difference in determining the amount to include in the basic EPS calculation. If the stock is noncumulative and the dividend has not been declared it is not included in the EPS calculation. If the preferred stock is cumulative, the dividend is included in the EPS calculation even if it has not been declared.

Based on this, how many years of dividends should be included in the EPS calculation for a cumulative preferred stock that is two years in arrears?

Just the current year. Why? Because the dividend is included every year on cumulative preferred stock whether declared or not. So, the first year in arrears has already been included in the EPS calculation during the year in which the dividend was not paid.

The numerator is net income ($132,000) minus the preferred dividends. Because neither preferred dividend has been declared, we will only use the dividend on the cumulative preferred stock. This dividend is $3,500 (1,000 shares x $50 par value x 7%). Therefore, our basic EPS calculation is:

\[
$3.89 = \frac{132,000 - 3,500}{33,000}
\]

Strategy: EPS is always rounded to the nearest penny ($0.01) for reporting purposes.

In order to complete the basic EPS calculation, we also need to know the weighted average number of common shares that were outstanding during the period. If a company has not issued or reacquired any shares during the year, then the denominator will simply be the number of shares that were outstanding at the end of the year (which is also the number that were outstanding at the beginning of the year).

If, however, a company has changed the number of shares during the year that are outstanding, we must calculate the weighted average. The calculation is not complex, but must be set up correctly to be performed accurately. The easiest way to set up the calculation is through the use of a table. The table starts with the number of outstanding shares from the beginning of the year until there is a change in the number of shares. This amount of shares is multiplied by the fraction of the year that the period represents. The new number of outstanding shares after the addition or subtraction is considered is then multiplied by the fraction of the period that this number of shares was outstanding. This process continues until all of the shares that were added or subtracted throughout the year have been accounted for.

Let’s do an example of a calculation of weighted average number of shares outstanding.

Assume that Eikner Corporation has 27,500 shares at the beginning of 2011. On March 1, it issues 10,000 new shares of stock and on September 1, it reacquires 5,000 shares of stock. What is the weighted average number of common shares outstanding?

Recapping the example we can see that Eikner has 27,500 shares outstanding from January 1 to February 28; they had 37,500 (27,500 + 10,000 issued on March 1) shares outstanding from March 1 to August 31; and they had 32,500 (37,500 − 5,000 shares reacquired on September 1) from September 1 to December 31. Let’s construct a table to do the calculations (round all numbers to the nearest whole number):

<table>
<thead>
<tr>
<th>Months</th>
<th>Shares Outstanding</th>
<th>x</th>
<th>Fraction of Year</th>
<th>Equivalent Shares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan to Feb</td>
<td>27,500</td>
<td>x</td>
<td>2/12</td>
<td>4,583</td>
</tr>
<tr>
<td>Mar to Aug</td>
<td>37,500</td>
<td>x</td>
<td>6/12</td>
<td>18,750</td>
</tr>
<tr>
<td>Sep to Dec</td>
<td>32,500</td>
<td>x</td>
<td>4/12</td>
<td>10,833</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>34,166</strong></td>
</tr>
</tbody>
</table>
Strategy: Notice that the final amount that was calculated for total weighted average of common shares outstanding (34,166) is larger than the smallest value for shares outstanding (27,500) and smaller than the largest value for shares outstanding (37,500). This is because the number represents an average and an average cannot be outside of the two extreme (largest and smallest) observations.

The outstanding shares can also increase by the issuing of stock dividends or through stock splits. For these cases, the retroactive recognition is given to the new shares. In other words, we must treat the new shares issued from a stock dividend or split as if they had been issued at the earliest date on any income statement presented, including these shares up the actual date of the dividend or split.

Going back to our example, let’s assume that Eikner issued a 15% stock dividend on June 30. This means that we will apply the added 15% in shares to the beginning balance and the 10,000 shares issued on March 1. The table will change slightly due to the stock dividend (round all numbers to the nearest whole number):

<table>
<thead>
<tr>
<th>Months Shares Outstanding</th>
<th>Shares Outstanding</th>
<th>x</th>
<th>Fraction of Year</th>
<th>x</th>
<th>Stock Dividend</th>
<th>=</th>
<th>Equivalent Shares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan to Feb</td>
<td>27,500</td>
<td>x</td>
<td>2/12</td>
<td>x</td>
<td>115%</td>
<td>=</td>
<td>5,271</td>
</tr>
<tr>
<td>Mar to Jun</td>
<td>37,500</td>
<td>x</td>
<td>4/12</td>
<td>x</td>
<td>115%</td>
<td>=</td>
<td>14,375</td>
</tr>
<tr>
<td>Jul to Aug</td>
<td>43,125</td>
<td>x</td>
<td>2/12</td>
<td>x</td>
<td>—</td>
<td>=</td>
<td>7,188</td>
</tr>
<tr>
<td>Sep to Dec</td>
<td>38,125</td>
<td>x</td>
<td>4/12</td>
<td>x</td>
<td>—</td>
<td>=</td>
<td>12,708</td>
</tr>
</tbody>
</table>

Total weighted average of common shares outstanding 39,542

In the table above, we applied the 15% stock dividend to all of the shares outstanding between the beginning date (January 1) and the actual date of the dividend (June 30). Let’s review how we determined the shares outstanding for each of the periods in the table:

- Jan to Feb: We started with an original amount of 27,500.
- Mar to Jun: We issued 10,000 new shares on March 1 so we now have 37,500 shares (27,500 + 10,000).
- Jul to Aug: On June 20 we had a 15% stock dividend. Because we had 37,500 shares at the time of the dividend, we added 5,625 (37,500 x 15%), giving us a new total of 43,125.
- Sep to Dec: On September 1 we reacquired 5,000 shares bring our total down to 38,125.

Diluted EPS

Many companies have other types of securities that have the potential to be converted into common shares at some point in the future. These companies have a complex capital structure and are required to calculate a diluted EPS in addition to a basic EPS. Both of these EPS figures are disclosed on the face of the income statement. Diluted EPS differs from basic EPS by showing the effects on EPS if all the potential common shares that could reduce EPS were issued. To be included in diluted EPS, potential common shares must have a dilutive effect. A dilutive effect is one that would cause EPS to decrease if the security was converted to common shares. On the other hand, securities that could be potentially converted to common stock would not be included if they were antidilutive. The steps to calculate diluted EPS are as follows:

Step 1. Calculate basic EPS.
Step 2. Include dilutive share options and warrants and compute a tentative diluted EPS.
Step 3. Develop a ranking of the impact of each convertible security (preferred stock and bond) on diluted EPS.

Step 4. Include each dilutive convertible security in order based on ranking and compute a new tentative diluted EPS.

Step 5. Select from step 4 the tentative diluted EPS that resulted in the lowest EPS amount.

Step 1 was discussed earlier so we will start with Step 2.

Step 2. Include dilutive share options and warrants and compute a tentative diluted EPS.

Any stock options or warrants that are dilutive should be included in diluted EPS. So how do we know if they are dilutive? Because the exercise of a warrant or option has no effect on net income or preferred dividends, it will only affect the denominator of the EPS calculation. (Remember, an item is dilutive if it decreases EPS.) Because the options and warrants only affect the denominator, they will only decrease EPS if they cause the denominator to get larger. When a warrant or option is exercised, an individual pays an exercise price. The exercise of an option or warrant will increase the number of shares outstanding but what we do with the amount of cash paid to exercise these options will determine if the issue is dilutive. It is assumed that all proceeds from the exercise of the options are used to reacquire treasury stock. This is called the treasury stock method. This treasury stock is assumed to be reacquired at the average market price throughout the year. Acquiring treasury stock causes the denominator in the EPS calculation to decrease because the shares that are acquired are no longer outstanding. So while we are issuing stock with the options, causing the denominator to increase, we are also reacquiring stock with the proceeds from the exercise of the options, which will cause the denominator to decrease. So if you acquire less treasury stock than you issue, the denominator overall will increase and make EPS decrease. If EPS decreases then the issue is included because it is dilutive. This would occur when the average market price is greater than the exercise price. The opposite (average market price less than the exercise price) would be antidualtive and not included.

NOTE: What if the company experiences a net loss? Then including options and warrants is ANTI dilutive.

Step 3. Develop a ranking of the impact of each convertible security (preferred stock and bond) on diluted EPS.

Unlike stock options and warrants, convertible preferred stock and convertible bonds will affect both the numerator and the denominator.

Convertible preferred stock will affect the numerator of the EPS calculation by removing the preferred dividend. Remember that the numerator of the EPS equation is net income -- preferred stock dividends. If we assume that convertible preferred stock is converted to common stock, then it will no longer be paid a preferred dividend and this payment will be removed from the numerator. The denominator will be increased by the number of shares of common stock the convertible preferred stock is converted into.

Convertible bonds also affect both the numerator and the denominator. The denominator is affected in the same manner as convertible preferred stock by increasing the number of common shares outstanding. The numerator is affected differently by convertible bonds. A convertible bond requires a corporation to pay interest to bondholders. This interest reduces net income. When the bond is converted into common stock, the corporation will no longer pay interest and net income will increase. However, net income will not increase by the same amount as the interest payment. Why? Because the interest payment causes net income to decrease; it also causes taxes, which are based on income, to decrease. When the interest payment is removed it will also increase net income causing an increase in tax expense. To illustrate this, let's look at an example.

Suppose we had revenue of $300 and expense of $200, which means that we have income before taxes of $100 ($300 − $200) this year. We have a 30% tax rate so we pay a total of $30 in taxes ($100 x 30%) and
have net income of $70 ($100 before taxes − $30 taxes). Let’s also assume that part of the expenses was a $40 interest payment on convertible bonds. If those bonds are converted we would not need to make the $40 interest payment, so our expenses would be $160 instead of $200. The conversion of the bonds did not affect revenue so it stays at $300. Our income before taxes would now be $140 ($300 revenue − $160 expenses), and our taxes would be $42 ($140 x 30%). Our new net income would be $98 ($140 before taxes − $42 taxes). Notice that when we converted the bonds our net income did go up from $70 to $98, but this increase of $28 was not the same as the bond interest payment of $40. The reason is the tax benefit we receive by making the interest payment. It caused our expenses to increase, which decreased our taxes.

So how much will our net income increase when we convert our bonds? It will increase by the amount of interest expense x (1− the tax rate). In our example, this was $40 interest expense x (1 − 30% tax rate), which equals $28.

Convertible securities are considered for inclusion in diluted earnings per share after stock options and warrants and are included only if dilutive. A corporation evaluates convertible securities in a specified sequence to avoid including a security that is antidilutive in combination with other securities. In order to develop a ranking of the impact of each convertible security on DEPS, the if-converted method is used. Each convertible security is assumed to have been converted into common shares, and then by dividing the resulting increase in the numerator of the earnings-per-share equation by the resulting increase in the denominator, a numerical value is calculated to use in ranking the impact on diluted earnings per share. The security with the lowest numerical impact causes the greatest decrease in diluted earnings per share and is the most dilutive. Beginning with the convertible security having the lowest numerical impact on DEPS, a corporation includes each security in a tentative diluted earnings per share calculation until the tentative diluted earnings per share is less than the numerical impact of the next convertible security in the ranking. The final diluted earnings per share is the last tentative figure.

Let’s look at an example of calculating the numerical impact using a convertible preferred stock and a convertible bond.

**Convertible Preferred Stock**

We have a $100 par, 8% convertible preferred stock. There are 3,000 shares of the stock and each can be converted into 5 shares of common stock. What is the numerical impact of this security?

The security pays an annual dividend of $24,000 (3,000 shares x $100 par value x 8%). It can be converted into 15,000 shares of common stock (3,000 preferred shares x 5 shares of common per preferred share).

Therefore, the numerical impact of the convertible preferred stock would be $1.60 ($24,000 ÷ 15,000).

**Convertible Bond**

We have a $1,000 par, 10% convertible bond. The bonds were sold at par for $400,000 and each can be converted into 30 shares of common stock. Our tax rate is 30%. What is the numerical impact of this security?

The security pays annual interest of $40,000 ($400,000 x 10%). After considering the effects of taxation, this would equate to $28,000 [$40,000 interest expense x (1−30% tax rate)]. It can be converted into 12,000 shares of common stock (400 bonds x 30 shares of common per bond).

Therefore, the numerical impact of the convertible bond would be $2.33 ($28,000 ÷ 12,000).

After determining the numerical impact, we then rank the securities with the lowest numerical impact first. In this example, the convertible preferred stock ($1.60) was lower than the convertible bond ($2.33) and is considered first when trying to determine whether each security is antidilutive.
Step 4. Include each dilutive convertible security in order based on ranking and compute a new tentative diluted EPS.

We would now use our basic EPS and add to it the convertible securities ranked in Step 3. If the inclusion of the convertible security causes EPS to decrease, the convertible security is dilutive and should be included in diluted EPS.

Let's assume that the company had net income of $344,000 and weighted average common shares of 150,000. Which of the convertible securities are dilutive and should be included in the diluted EPS?

Basic EPS is $2.13 \([\frac{\$344,000 \text{ net income} - \$24,000 \text{ preferred dividend}}{150,000 \text{ shares}}]\).

Because the convertible preferred stock has the lowest numerical impact ($1.60 vs. $2.33) it is included first. In the numerator we will use the net income of $344,000, but we do not subtract the preferred dividend because we are assuming that the preferred stock is converted to common stock and therefore the preferred dividend is eliminated. In the denominator we will use the original 150,000 shares of common stock and add the 15,000 new shares that will be converted from the preferred shares. This will give us a tentative diluted EPS of $2.08 ($344,000 ÷ 165,000 shares).

Because the new tentative diluted EPS ($2.08) is less than the basic EPS ($2.13), the convertible preferred stock is dilutive and should be included.

We next look at the convertible bonds. In the numerator we will start with the net income from the previous step of $344,000. To this we need to add the $28,000 interest expense (net of taxes), giving us a value of $372,000. In the denominator we will use the 165,000 shares of common stock after the inclusion of the convertible preferred shares and add the 12,000 new shares that will be converted from the bonds for a new total of 177,000. This will give us a tentative diluted EPS of $2.10 ($372, ÷ 177,000 shares).

Because the new tentative diluted EPS ($2.10) is greater than the previous tentative diluted EPS ($2.08), the convertible bond is antidilutive and should not be included in the final diluted EPS.

Strategy: We did not have to do the calculation to see if the convertible bond should be included in the diluted EPS. We could have looked at the numerical impact of the convertible bond ($2.33) and noticed that it was more than the value of the tentative diluted EPS ($2.08). Because the numerical impact was larger, it would make the diluted EPS increase so we would not include it in the final diluted EPS.

Step 5. Select as the diluted EPS the lowest tentative diluted EPS.

Because the $2.08 tentative diluted EPS that includes the convertible preferred stock is lower than the $2.10 diluted EPS that includes both the preferred stock and the bond, we will use the $2.08 as our diluted EPS.

Dividends

Cash Dividends

Dividends are distributed to owners as a part of the stockholders' return on their investment. Dividends can take many forms with the most common being cash, property, or stock. In general, there are three dates of importance from the corporation's standpoint regarding dividends:

1. Date of Declaration. On this date the board of directors formally declares that a dividend will be paid to the stockholders. On this date the dividend that is owed becomes a liability (usually classified as a current liability). The entry on this date would look like this:

   \[
   \begin{align*}
   \text{Retained earnings} & \quad \text{XXX} \\
   \text{Dividend payable} & \quad \text{XXX}
   \end{align*}
   \]
2. Date of Record. This is the date that determines who will receive the dividend. The corporation will pay the dividend to the owner of record on this date. There is no journal entry made on this date, only a memorandum entry.

3. Date of Payment. This is the date when the corporation actually pays the stockholders the dividend and removes the liability from the books.

<table>
<thead>
<tr>
<th>Dividend payable</th>
<th>XXX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash (or other asset)</td>
<td>XXX</td>
</tr>
</tbody>
</table>

Property Dividends

A property dividend is payable in assets other than cash and usually is marketable securities held in other companies. On the date of declaration with a property dividend, the corporation will revalue the asset to be distributed to its fair value. This will usually result in a gain or a loss being recognized on the asset in addition to recording the liability. Assume that we decide to give our stockholders bonds that we have held for several years. The bonds are listed in our books with a carrying value of $100,000 but have a fair value of $112,000, so we would have a gain of $12,000 on the bonds. The entry would look like this:

<table>
<thead>
<tr>
<th>Investment in Bonds</th>
<th>12,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain on investment in bonds</td>
<td>12,000</td>
</tr>
<tr>
<td>Retained earnings</td>
<td>112,000</td>
</tr>
<tr>
<td>Dividend payable</td>
<td>112,000</td>
</tr>
</tbody>
</table>

Preferred Stock Dividends

In addition to common stock, preferred stock is also paid dividends. Preferred stock can either be cumulative or noncumulative. A cumulative preferred stock must be paid all dividends owed in the current year and any dividends not paid in past years (dividends in arrears) before the common stock owners can be paid a dividend. If a preferred stock is noncumulative, the company does not have to pay missed dividends from previous years before the common stockholders are paid dividends.

In addition to being either cumulative or noncumulative, preferred stock can be nonparticipating, fully participating, or partially participating. Fully participating preferred stock shares equally with common stock in any extra cash dividends that are available after both the preferred stock and common stockholders have been paid ordinary dividends. The extra dividends are distributed proportionally based on the respective total par values of each class of stock. Partially participating preferred stock is limited in its participation in extra cash dividends to a fixed rate or amount per share. Nonparticipating preferred stock is only entitled to the stated dividends and does not receive any extra dividends.

So how does all this work? Let’s go through a couple of examples of cumulative versus noncumulative and partial participating versus fully participating preferred stock dividends.
**Cumulative vs. Noncumulative Dividends**

The company has 100,000 shares of $10 par value common stock and 2,000 shares of $100 par value, 8% preferred stock. Due to past down years, the company has not been able to pay dividends for the past two (2) years. How would the $200,000 in dividends to be paid this year be divided among the common and preferred stockholders if the preferred stock were noncumulative?

Because the preferred stock is noncumulative, the past years are irrelevant and the only dividend paid will be for the current year. Therefore, the preferred stockholders will get $16,000 in dividends ($8 per share ($100 x 8%) x 2,000 shares). The remaining $184,000 ($200,000 total − $16,000 preferred) would go to the common stockholders.

How would your answer change if the preferred stock were cumulative instead of noncumulative?

If the stock were cumulative, the company would have to pay the current year dividends of $16,000 plus $32,000 for the two years that the company is in arrears on the preferred dividends for a total of $48,000 to the preferred stockholders. This would leave $152,000 ($200,000 − $48,000) available to pay the common stockholders.

**Partial Participating vs. Fully Participating Dividends**

The company has 100,000 shares of $10 par value common stock and 2,000 shares of $100 par value, 8% preferred stock. The company has $200,000 to distribute as dividends this year. How would the $200,000 in dividends to be paid this year be divided among the common and preferred stockholders if the preferred stock were fully participating?

First, we would determine the ordinary dividend for the preferred stock. That dividend is $16,000 (($8 per share ($100 x 8%) x 2,000 shares). Next, the common stockholders would be entitled to 8% on the par value of the common stock, or $80,000 (100,000 shares x $10 par value x 8%). This would leave $104,000 ($200,000 total − $16,000 preferred − $80,000 common) as extra dividends to split evenly between the preferred and common stockholders. The splitting of these extra dividends would be based upon each stock's relative par value. The par value of the preferred stock is $200,000 and the par value of the common stock is $1,000,000. Therefore, the common stockholders will be entitled to 83.33% of the extra dividends [$1,000,000 par value common ÷ ($1,000,000 common + $200,000 preferred)]. The preferred stockholders would be entitled to 16.67% of the extra dividends [$200,000 par value preferred ÷ ($1,000,000 common + $200,000 preferred)]. The total amount of dividends would be:

<table>
<thead>
<tr>
<th></th>
<th>Common</th>
<th>Preferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordinary Dividends</td>
<td>$80,000</td>
<td>$16,000</td>
</tr>
<tr>
<td>Extra Dividends</td>
<td>$86,663</td>
<td>$17,337</td>
</tr>
<tr>
<td>Total Dividends</td>
<td>$166,663</td>
<td>$33,337</td>
</tr>
</tbody>
</table>

This time let's assume that instead of being fully participating, the preferred stock was partially participating and limited to 12%. How would your answer change?
The calculation of the ordinary dividends does not change so the preferred stockholders receive $16,000 and the common stockholders receive $80,000. The difference is how the $104,000 extra dividends are divided. The preferred stockholders are limited to 12% in dividends. They have already received 8% so they are only entitled to 4% more (12% – 8%). This means that they would receive another $8,000 ($200,000 par value x 4%). This would leave $96,000 in extra dividends for the common shareholders ($104,000 extra dividends – $8,000 preferred dividend share). The total amount of dividends would be:

<table>
<thead>
<tr>
<th></th>
<th>Common</th>
<th>Preferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordinary Dividends</td>
<td>$80,000</td>
<td>$16,000</td>
</tr>
<tr>
<td>Extra Dividends</td>
<td>$96,000</td>
<td>$8,000</td>
</tr>
<tr>
<td>Total Dividends</td>
<td>$176,000</td>
<td>$24,000</td>
</tr>
</tbody>
</table>

**Stock Dividends**

A stock dividend that is less than 20% to 25% of the previously outstanding shares and is presumed to have no apparent effect on the market price per share is defined as a small stock dividend. It is treated as like a simultaneous sale of stock and payment of a dividend. When a small stock dividend is declared the corporation will transfer from retained earnings an amount equal to the fair value of the stock.

Assume that a company declares a 10% stock dividend. The company has a $1 par value common stock that has 250,000 shares authorized, 175,000 shares issued, and 23,000 shares that have been reacquired and are held as treasury stock. On the date of declaration the stock is trading at $21 per share.

The amount of stock issued is 15,200 shares. This is because there were 152,000 shares outstanding (175,000 shares issued – 23,000 shares treasury stock). Because the par value is $1 per share and 15,200 shares were issued (10% of 152,000) the amount in common stock to be distributed is $15,200. The fair value of the stock dividend is $319,200 (15,200 shares x $21 fair value), which is deducted (debited) from retained earnings. The difference between the debit to retained earnings and the credit to common stock to be distributed is credited to additional paid-in capital. The entry to account for this would be:

Declaration date:

\[
\begin{align*}
\text{Retained earnings} & \quad 319,200 \\
\text{Common stock to be distributed} & \quad 15,200 \\
\text{Additional paid-in capital from stock dividend} & \quad 304,000
\end{align*}
\]

When the shares are issued, common stock to be distributed is debited and common stock is credited:

Payment Date

\[
\begin{align*}
\text{Common stock to be distributed} & \quad 15,200 \\
\text{Common stock ($1 par value)} & \quad 15,200
\end{align*}
\]

A large stock dividend, or a stock split affected in the form of a dividend, is similar in nature to a stock split because of the resulting decrease in the market price per share. Therefore, only the par or stated value (the minimum amount legally required to be capitalized) is debited to Retained Earnings when the dividend is declared.

Assume that a company declares a 30% stock split effected in the form of a dividend. The company has $1 par value common stock that has 250,000 shares authorized, 175,000 shares issued, and 23,000 shares that have been reacquired and are held as treasury stock. On the date of declaration the stock is trading at $21 per share.
The amount of stock issued is 45,600 shares. This is because there were 152,000 shares outstanding (175,000 shares issued – 23,000 shares treasury stock). Because the par value is $1 per share and 45,600 shares were issued (30% of 152,000) the amount in common stock to be distributed is $45,600, which is deducted (debited), from retained earnings. The entry to account for this would be:

Declaration date:

<table>
<thead>
<tr>
<th>Retained earnings</th>
<th>45,600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common stock to be distributed</td>
<td>45,600</td>
</tr>
</tbody>
</table>

When the shares are issued, common stock to be distributed is debited and common stock is credited:

Payment Date

<table>
<thead>
<tr>
<th>Common stock to be distributed</th>
<th>45,600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common stock ($1 par value)</td>
<td>45,600</td>
</tr>
</tbody>
</table>
Test Your Knowledge

1. Three corporations have different types of stock options outstanding. Corporation A has issued options to purchase 1,000 shares of common stock at $50 per share, Corporation B has issued options to purchase 2,000 shares of common stock at $40 per share, and Corporation C has issued options to purchase 3,000 shares of common stock at $55 per share. In 2011, the average market prices per share of the common stock for each corporation are as follows:

<table>
<thead>
<tr>
<th>Corp.</th>
<th>Average market price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corp. A</td>
<td>$55</td>
</tr>
<tr>
<td>Corp. B</td>
<td>$46</td>
</tr>
<tr>
<td>Corp. C</td>
<td>$48</td>
</tr>
</tbody>
</table>

Determine the change in the number of shares used to calculate the 2011 diluted earnings per share for these options for each of these corporations.

(a) Corporation A

(b) Corporation B

(c) Corporation C
2. Information relating to the complex capital structure of Rinehart Corporation is as follows:

2011 net income: $24,500
2011 income tax rate: 30%
Common stock: 11,000 shares outstanding
$100 par convertible preferred stock: 1,000 shares with each share of preferred stock convertible into two shares of common stock
7% convertible bonds: $100,000 face value (issued at par), each $1,000 bond convertible into 27 shares of common stock
9% convertible bonds: $50,000 face value (issued at par), each $1,000 bond convertible into 50 shares of common stock
2011 preferred dividends: $2.50 per share
All stocks and bonds have been outstanding for the entire year

(a) Prepare a ranking of the order in which the securities would be included in diluted EPS.

(b) Compute basic earnings per share.

(c) Compute diluted earnings per share.
3. Crown Corporation had the following account balances on December 31, 2011:

- Common stock, $5 par, 60,000 shares issued and outstanding: $300,000
- Additional paid-in capital on common stock: $600,000
- Retained earnings: $250,000

Common stock is currently selling at $14 per share.

Prepare the appropriate journal entries for the declaration and payment of each of the following proposed dividends (treat each proposal separately).

(a) Cash dividend of $0.70 per common share

(b) A 10% stock dividend

(c) A 30% stock dividend
4. Lee Company has 3,000 shares of 7%, $100 par preferred stock and 20,000 shares of $10 par common stock outstanding. If $80,000 is available for dividends, determine the amount of dividends to be paid to each class of stock under each of the following independent assumptions.

(a) Preferred stock is nonparticipating and noncumulative.

(b) Preferred stock is fully participating and noncumulative.

(c) Preferred stock is nonparticipating and cumulative, and preferred dividends are two years in arrears.
### Answers to Test Your Knowledge

1. **Corporation A**
   - Number of shares issued = 1,000
   - Proceeds from assumed exercise of options: $50,000 = 1,000 x $50
   - Treasury shares assumed reacquired at average market price of $55: 909 = $50,000 ÷ $55
   - Increase in shares due to options: 91 (1,000 issued – 909 reacquired)

2. **Corporation B**
   - Number of shares issued = 2,000
   - Proceeds from assumed exercise of options: $80,000 = 2,000 x $40
   - Treasury shares assumed reacquired at average market price of $46: 1,739 = $80,000 ÷ $46
   - Increase in shares due to options: 261 (2,000 issued – 1,739 reacquired)

3. **Corporation C**
   - The proceeds and change in the number of shares for C are not calculated because the average market price is less than the exercise price, making its stock options antidilutive.

2. (a)

<table>
<thead>
<tr>
<th>Security</th>
<th>Impact Formula</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convertible preferred stock</td>
<td>$1.25 = $2,500 / 1,000 x 2</td>
<td>1</td>
</tr>
<tr>
<td>Numerator: $2,500. Preferred dividend of $2.50 per share times 1,000 share. Denominator: 2,000 shares. Each of the 1,000 shares is convertible into 2 shares of common stock.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Security</th>
<th>Impact Formula</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>7% Convertible Bonds</td>
<td>$1.81 = $7,000 x (1 - 30%) / 100 x 27</td>
<td>3</td>
</tr>
<tr>
<td>Numerator: $4,900. Interest expense saved of $7,000 less tax advantage for interest of (1 - tax rate (30%)). Denominator: 2,700 shares. Each of the 100 bonds is convertible into 27 shares of common stock.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Security</th>
<th>Impact Formula</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>9% Convertible Bonds</td>
<td>$1.26 = $4,500 x (1 - 30%) / 50 x 50</td>
<td>2</td>
</tr>
<tr>
<td>Numerator: $3,150. Interest expense saved of $4,500 less tax advantage for interest of (1 - tax rate (30%)). Denominator: 2,500 shares. Each of the 50 bonds is convertible into 50 shares of common stock.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) Basic EPS = (24,500 – 2,500) / 11,000
### Earnings Per Share

<table>
<thead>
<tr>
<th>Earnings</th>
<th>Shares</th>
<th>EPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic EPS</td>
<td>$22,000 ÷ 11,000 =</td>
<td>$2.00</td>
</tr>
</tbody>
</table>

Diluted EPS from preferred

Tentative Diluted EPS $24,500 ÷ 13,000 = $1.88

Diluted EPS from 9% bond

Tentative Diluted EPS $27,650 ÷ 15,500 = $1.78

The 7% convertible bond would be antidilutive because its impact ($1.81) is greater than the tentative diluted EPS of $1.78 calculated after the 9% bonds.

### Declaration Dates

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(a)</strong> Declaration date:</td>
<td>Retained earnings</td>
<td>42,000</td>
</tr>
<tr>
<td></td>
<td>Dividends payable ($0.70 x 60,000)</td>
<td>42,000</td>
</tr>
<tr>
<td>Payment date:</td>
<td>Dividends payable</td>
<td>42,000</td>
</tr>
<tr>
<td></td>
<td>Cash</td>
<td>42,000</td>
</tr>
<tr>
<td><strong>(b)</strong> Declaration date:</td>
<td>Retained earnings [(0.10 x 60,000) x $14]</td>
<td>84,000</td>
</tr>
<tr>
<td></td>
<td>Common Stock to be Distributed ($5 x 6,000)</td>
<td>30,000</td>
</tr>
<tr>
<td></td>
<td>Additional Paid-in Capital from Stock Dividend</td>
<td>54,000</td>
</tr>
<tr>
<td>Payment date:</td>
<td>Common Stock to be Distributed</td>
<td>30,000</td>
</tr>
<tr>
<td></td>
<td>Common stock ($5 x 6,000)</td>
<td>30,000</td>
</tr>
<tr>
<td><strong>(c)</strong> Declaration date:</td>
<td>Retained earnings [(0.30 x 60,000) x $5]</td>
<td>90,000</td>
</tr>
<tr>
<td>Payment date:</td>
<td>Common Stock to be Distributed ($5 x 18,000)</td>
<td>90,000</td>
</tr>
<tr>
<td></td>
<td>Common Stock ($5 x 18,000)</td>
<td>90,000</td>
</tr>
</tbody>
</table>
4. (a) Nonparticipating and noncumulative:

Dividends available $80,000
Less: Preferred dividends ($100 x 0.07 x 3,000) (21,000)
Dividend for common stockholders $59,000

(b) Fully participating and noncumulative:

7% to preferred ($100 x 7% x 3,000) $21,000
Equal dividend to common ($10 x 7% x 20,000) $14,000
Total ordinary dividends $35,000
Total to distribute $80,000
Less ordinary dividends ($35,000)
Extra dividends $45,000

Par value of preferred (3,000 shares x $100 par) $300,000
Par value of common (20,000 shares x $10 par) $200,000
Total par value $500,000

Preferred portion is 60% [$300,000 ÷ ($300,000 + $200,000)]
Common portion is 40% [$200,000 ÷ ($300,000 + $200,000)]

Extra dividend to preferred is $27,000 (60% of $45,000)
Extra dividend to common is $18,000 (40% of $45,000)

<table>
<thead>
<tr>
<th>Common</th>
<th>Preferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordinary Dividends</td>
<td>$14,000</td>
</tr>
<tr>
<td>Extra Dividends</td>
<td>$18,000</td>
</tr>
<tr>
<td>Total Dividends</td>
<td>$32,000</td>
</tr>
</tbody>
</table>

(c) Nonparticipating and cumulative with dividends two years in arrears:

Dividends available $80,000
Less: Preferred dividends
Dividends in arrears ($100 x 0.07 x 3,000 x 2 years) $42,000
Current dividends ($100 x 0.07 x 3,000) $21,000 (63,000)
Dividends for common stockholders $17,000