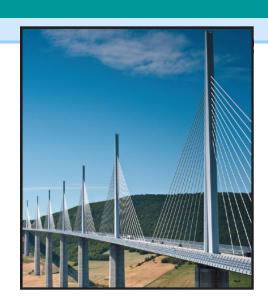


CHAPTER 16

DILUTIVE SECURITIES AND EARNINGS PER SHARE

Intermediate Accounting 13th Edition Kieso, Weygandt, and Warfield



Dilutive Securities and Earnings Per Share

Dilutive Securities and Compensation Plans

- Debt and equity
- Convertible debt
- Convertible preferred stock
- Stock warrants
- Accounting for compensation

Computing Earnings Per Share

- Simple capital structure
- Complex capital structure

Computing Earnings Per Share

Earnings per share indicates the income earned by each share of common stock.

- Companies report earnings per share only for common stock.
- When income statement contains intermediate components of income, companies should disclose earnings per share for each component.

Earnings per share:	
Income from continuing operations	\$4.00
Loss from discontinued operations, net of tax	0.60
Income before extraordinary item	3.40
Extraordinary gain, net of tax	1.00
Net income	\$4.40

Illustration 16-7

- Simple Structure--Only common stock; no potentially dilutive securities.
- Complex Structure—Potentially dilutive securities are present.
- > "Dilutive" means the ability to influence the EPS in a downward direction.

Preferred Stock Dividends

Subtracts the current year preferred stock dividend from net income to arrive at income available to common stockholders.

Illustration 16-8

Earnings per Share = Net Income - Preferred Dividends
Weighted-Average Number of Shares Outstanding

Preferred dividends are subtracted on cumulative preferred stock, whether declared or not.

Weighted-Average Number of Shares

Companies must weight the shares by the fraction of the period they are outstanding.

Stock dividends or stock splits: companies need to restate the shares outstanding before the stock dividend or split.

E16-16: On January 1, 2010, Chang Corp. had 480,000 shares of common stock outstanding. During 2010, it had the following transactions that affected the common stock account.

February 1 Issued 120,000 Shares

March 1 Issued a 20% stock dividend

May 1 Acquired 100,000 share of treasury stock

June 1 Issued a 3-for-1 stock split

October 1 Reissued 60,000 shares of treasury stock

Instructions Determine the weighted-average number of shares outstanding as of December 31, 2010.

Weighted-Average Number of Shares

									Weighted
	Change in	Shares		Fraction		20%		3/1	Average
Date	Shares	Outstanding		of Year		Dividend		Split	Shares
Jan. 1		480,000	X	1/12	X	120%	X	3	144,000
Feb. 1	120,000	600,000	X	1/12	X	120%	X	3	180,000
Mar. 1	120,000	720,000	X	2/12			X	3	360,000
May 1	(100,000)	620,000	X	1/12			X	3	155,000
June 1	3/1 split	1,860,000	X	4/12			X		620,000
Oct. 1	60,000	1,920,000	X	3/12			X		480,000
									1,939,000

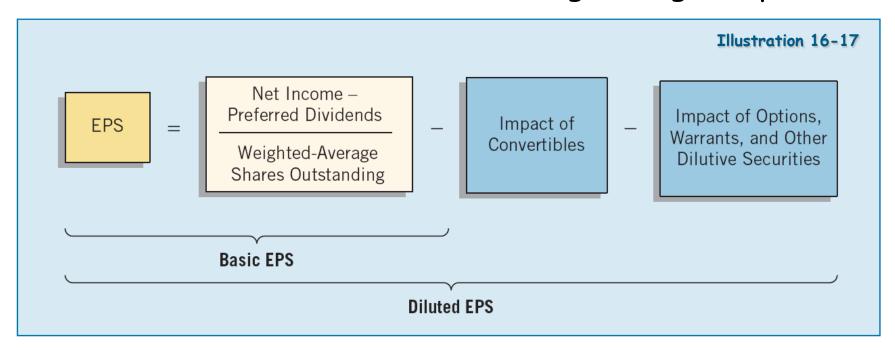
Complex Capital Structure exists when a business has

- convertible securities,
- options, warrants, or other rights

that upon conversion or exercise could dilute earnings per share.

Company reports both basic and diluted earnings per share.

Diluted EPS includes the effect of all potential dilutive common shares that were outstanding during the period.



Companies will not report diluted EPS if the securities in their capital structure are antidilutive.

Diluted EPS - Convertible Securities

Measure the dilutive effects of potential conversion on EPS using the if-converted method.

This method for a convertible bond assumes:

- (1) the conversion at the beginning of the period (or at the time of issuance of the security, if issued during the period), and
- (2) the elimination of related interest, net of tax.

E16-22 (Convertible Bonds): In 2010 Buraka Enterprises issued, at par, 75, \$1,000, 8% bonds, each convertible into 100 shares of common stock. Buraka had revenues of \$17,500 and expenses other than interest and taxes of \$8,400 for 2011. (Assume that the tax rate is 40%.) Throughout 2011, 2,000 shares of common stock were outstanding; none of the bonds was converted or redeemed.

Instructions

- (a) Compute diluted earnings per share for 2011.
- (b) Assume same facts as those for Part (a), except the 75 bonds were issued on September 1, 2011 (rather than in 2010), and none have been converted or redeemed.

E16-22 (a) Compute diluted earnings per share for 2011.

Calculation of Net Income

Revenues	\$17,500
Expenses	8,400
Bond interest expense (75 \times \$1,000 \times 8%)	6,000
Income before taxes	3,100
Income tax expense (40%)	1,240
Net income	\$ 1,860

E16-22 (a) Compute diluted earnings per share for 2011.

When calculating **Diluted** EPS, begin with **Basis** EPS.

Basic EPS

\$.93

Weighted average shares = 2,000

E16-22 (a) Compute diluted earnings per share for 2011.

When calculating **Diluted** EPS, begin with **Basis** EPS.

Diluted EPS

$$\frac{$1,860 + $6,000 (1 - .40)}{2,000 + 7,500} = \frac{$5,460}{9,500} = \frac{$.57}{}$$

Basic EPS = .93

Effect on EPS = .48

Chapter 16-16

E16-22 (b) Assume bonds were issued on Sept. 1, 2011.

Calculation of Net Income

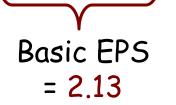
Revenues	\$ 17,500
Expenses	8,400
Bond interest expense (75 x \$1,000 x 8% x $4/12$)	2,000
Income before taxes	7,100
Income taxes (40%)	2,840
Net income	\$ 4,260

E16-22 (b) Assume bonds were issued on Sept. 1, 2011.

When calculating **Diluted** EPS, begin with **Basis** EPS.

Diluted EPS

$$\frac{$4,260 + $2,000 (1 - .40)}{2,000 + 7,500 \times 4/12 \text{ yr.}} = \frac{$5,460}{4,500} = $1.21$$



Effect on EPS = .48

Chapter 16-18

P16-8 (Variation-Convertible Preferred Stock): Prior to 2010, Barkley Company issued 40,000 shares of 6% convertible, cumulative preferred stock, \$100 par value. Each share is convertible into 5 shares of common stock. Net income for 2010 was \$1,200,000. There were 600,000 common shares outstanding during 2010. There were no changes during 2010 in the number of common or preferred shares outstanding.

Instructions

(a) Compute diluted earnings per share for 2010.

P16-8 (a) Compute diluted earnings per share for 2010.

When calculating **Diluted** EPS, begin with **Basis** EPS.

Basic EPS

Net income \$1,200,000 - Pfd. Div. \$240,000*

Weighted average shares = 600,000

* 40,000 shares \times \$100 par \times 6% = \$240,000 dividend

P16-8 (a) Compute diluted earnings per share for 2010.

When calculating **Diluted** EPS, begin with **Basis** EPS.

Diluted EPS

$$$1,200,000 - $240,000 + $240,000 + 200,000* = $$1,200,000 = -$
 $$00,000 + 200,000* = $1,200,000 = -$

Basic EPS = 1.60 Effect on EPS = 1.20 *(40,000 x 5)$$

Chapter 16-21

P16-8 (a) Compute diluted earnings per share for 2010 assuming each share of preferred is convertible into 3 shares of common stock.

Diluted EPS

Chapter 16-22

P16-8 (a) Compute diluted earnings per share for 2010 assuming each share of preferred is convertible into 3 shares of common stock.

Diluted EPS

Basic = Diluted EPS

Chapter 16-23

Diluted EPS - Options and Warrants

Measure the dilutive effects of potential conversion using the treasury-stock method.

This method assumes:

- (1) company exercises the options or warrants at the beginning of the year (or date of issue if later), and
- (2) that it uses those proceeds to purchase common stock for the treasury.

E16-26 (EPS with Options): Zambrano Company's net income for 2010 is \$40,000. The only potentially dilutive securities outstanding were 1,000 options issued during 2009, each exercisable for one share at \$8. None has been exercised, and 10,000 shares of common were outstanding during 2010. The average market price of the stock during 2010 was \$20.

Instructions

- (a) Compute diluted earnings per share.
- (b) Assume the 1,000 options were issued on October 1, 2010 (rather than in 2009). The average market price during the last 3 months of 2010 was \$20.

E16-26 (a) Compute diluted earnings per share for 2010.

Treasury-Stock Method

Proceeds if shares issued $(1,000 \times \$8)$	\$8,000	
Purchase price for treasury shares	÷	\$20
Shares assumed purchased		400
Shares assumed issued		1,000
Incremental share increase		600

E16-26 (a) Compute diluted earnings per share for 2010.

When calculating **Diluted** EPS, begin with **Basis** EPS.

Diluted EPS

Chapter 16-27

E16-26 (b) Compute diluted earnings per share assuming the 1,000 options were issued on October 1, 2010.

Treasury-Stock Method

Proceeds if shares issued $(1,000 \times \$8)$		\$ 8,000
Purchase price for treasury shares	÷	\$ 20
Shares assumed purchased		400
Shares assumed issued	_	1,000
Incremental share increase		600
Weight for 3 months assumed outstanding	×	3/12
Weighted incremental share increase		150

E16-26 (b) Compute diluted earnings per share assuming the 1,000 options were issued on October 1, 2010.

Diluted EPS

Contingent Issue Agreement

Contingent shares are issued as a result of the:

- 1. passage of time or
- 2. attainment of a certain earnings or market price level.

Antidilution Revisited

Ignore antidilutive securities in all calculations and in computing diluted earnings per share.

EPS Presentation and Disclosure

A company should show per share amounts for:

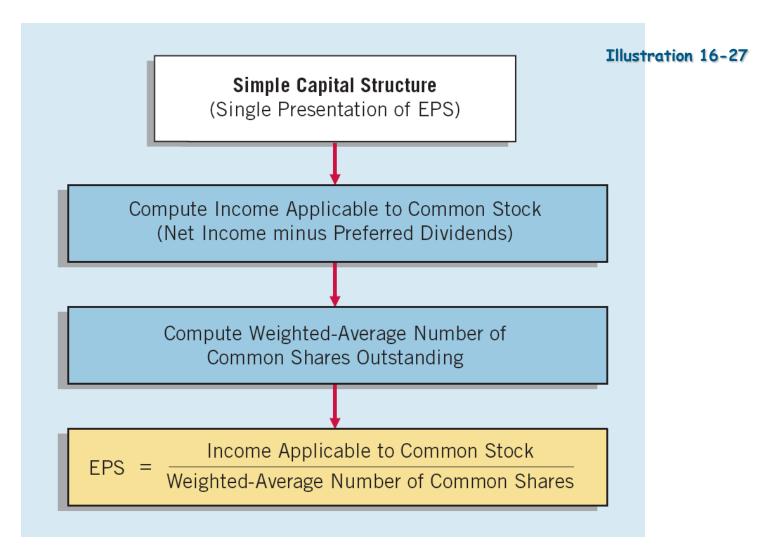
- income from continuing operations,
- income before extraordinary items, and
- net income.

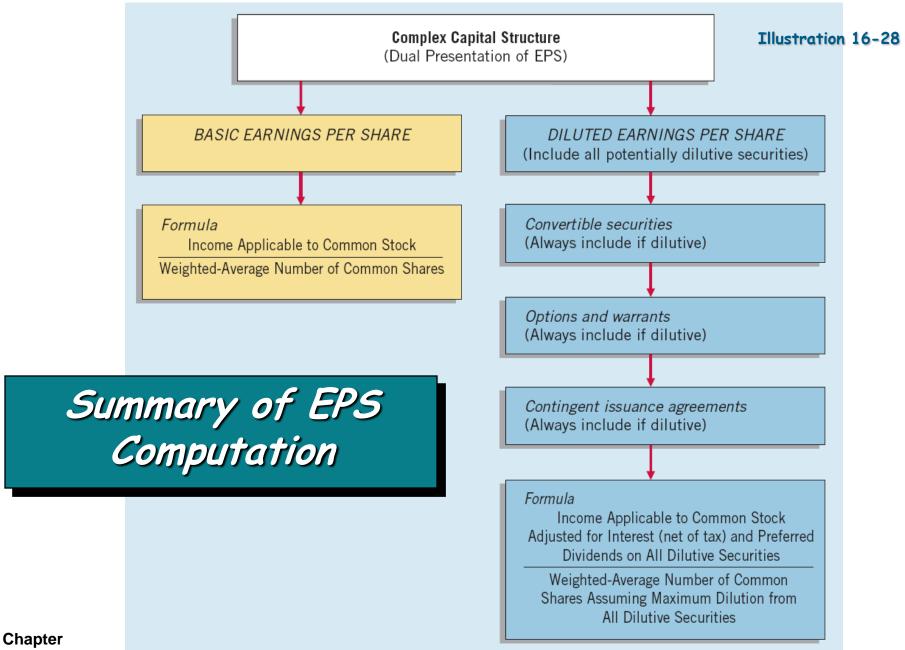
Per share amounts for a discontinued operation or an extraordinary item should be presented on the face of the income statement or in the notes.

Complex capital structures and dual presentation of EPS require the following additional disclosures in note form.

- 1. Description of pertinent rights and privileges of the various securities outstanding.
- 2. A reconciliation of the numerators and denominators of the basic and diluted per share computations, including individual income and share amount effects of all securities that affect EPS.
- 3. The effect given preferred dividends in determining income available to common stockholders in computing basic EPS.
- 4. Securities that could potentially dilute basic EPS in the future that were excluded in the computation because they would be antidilutive.
- 5. Effect of conversions subsequent to year-end, but before issuing statements.

Summary of EPS Computation







CONVERGENCE CORNER

DILUTIVE SECURITIES AND EARNINGS PER SHARE

* RELEVANT FACTS

- Under U.S. GAAP, all of the proceeds of convertible debt are recorded as long-term debt. Under iGAAP, convertible bonds are "bifurcated"—separated into the equity component (the value of the conversion option) of the bond issue and the debt component.
- Although the calculation of basic and diluted earnings per share is similar between iGAAP and U.S. GAAP, the Boards are working to resolve the few minor differences in EPS reporting.
- Other EPS differences relate to (1) the treasury-stock method and how the proceeds from extinguishment of a liability should be accounted for, and (2) how to compute the weighted-average of contingently issuable shares.

Chapter 16-35

Stock-Appreciation Rights (SARs):

- The company gives an executive the right to receive compensation equal to the share appreciation.
- Share appreciation is the excess of the market price of the stock at the date of exercise over a pre-established price.
- The company may pay the share appreciation in cash, shares, or a combination of both.
- The accounting for stock-appreciation rights depends on whether the company classifies the rights as equity or as a liability.

SARS— Share-Based Equity Awards

Companies classify SARs as equity awards if at the date of exercise, the holder receives shares of stock from the company upon exercise.

- holder receives shares in an amount equal to the share-price appreciation (the difference between the market price and the pre-established price).
- ✓ At the date of grant, the company determines a fair value for the SAR and then allocates this amount to compensation expense over the service period of the employees.

SARS— Share-Based Liability Awards

Companies classify SARs as liability awards if at the date of exercise, the holder receives a cash payment. Accounting:

- Measure the fair value of the award at the grant date and accrue compensation over the service period.
- 2. Remeasure the fair value each reporting period, until the award is settled; adjust the compensation cost each period for changes in fair value pro-rated for the portion of the service period completed.
- 3. Once the service period is completed, determine compensation expense each subsequent period by reporting the full change in market price as an adjustment to compensation expense.

ACCOUNTING FOR STOCK-APPRECIATION RIGHTS

Illustration: American Hotels, Inc. establishes a stock-appreciation rights plan on January 1, 2010. The plan entitles executives to receive cash at the date of exercise for the difference between the market price of the stock and the pre-established price of \$10 on 10,000 SARs. The fair value of the SARs on December 31, 2010, is \$3, and the service period runs for two years (2010-2011).

Illustration 16A-1 indicates the amount of compensation expense to be recorded each period.

ACCOUNTING FOR STOCK-APPRECIATION RIGHTS

Illustration 16-A1

				CIATION RIGHTS IPENSATION EXPENSE			
(1)	(2)	(3)	(4)	(5)			
		Cumulative		Cumulative Compensation			
	Fair	Compensation	Percentage	Accrued	Expense	Expense	Expense
Date	Value	Recognizable ^a	Accrued ^b	to Date	2010	2011	2012
12/31/10	\$3	\$30,000	50%	\$ 15,000	\$15,000		
				55,000		\$55,000	
12/31/11	7	70,000	100%	70,000			
				(20,000)			\$(20,000)
12/31/12	5	50,000	100%	\$ 50,000			
30 11:							
		r unexercised SARs to be ased upon a two-year se					

American Hotels records compensation expense in the first year as follows.

Compensation Expense

15,000

Liability under Stock-Appreciation Plan

15,000

APPENDIX 16A

ACCOUNTING FOR STOCK-APPRECIATION RIGHTS

In 2012, when it records negative compensation expense, American would debit the account for \$20,000. The entry to record the negative compensation expense is as follows.

Liability under Stock-Appreciation Plan

20,000

Compensation Expense

20,000

At December 31, 2012, the executives receive \$50,000. American would remove the liability with the following entry.

Liability under Stock-Appreciation Plan

50,000

Cash

50,000

COMPREHENSIVE EARNINGS PER SHARE EXAMPLE

Balance Sheet for Comprehensive Illustration

WEBSTER CORPORATION BALANCE SHEET (PARTIAL) AT DECEMBER 31, 2010	
Long-term debt Notes payable, 14%	\$ 1,000,000
8% convertible bonds payable 10% convertible bonds payable Total long-term debt	2,500,000 <u>2,500,000</u> \$ 6,000,000
Stockholders' equity	- , , , , , , , , , , , , , , , , , , ,
10% cumulative, convertible preferred stock, par value \$100; 100,000 shares authorized, 25,000 shares issued and outstanding Common stock, par value \$1, 5,000,000 shares authorized,	\$ 2,500,000
500,000 shares issued and outstanding Additional paid-in capital	500,000 2,000,000
Retained earnings	9,000,000
Total stockholders' equity	<u>\$14,000,000</u>

Balance Sheet for Comprehensive Illustration

Illustration 16-B1

Notes and Assumptions December 31, 2010

- 1. Options were granted in July 2008 to purchase 50,000 shares of common stock at \$20 per share. The average market price of Webster's common stock during 2010 was \$30 per share. All options are still outstanding at the end of 2010.
- 2. Both the 8 percent and 10 percent convertible bonds were issued in 2009 at face value. Each convertible bond is convertible into 40 shares of common stock. (Each bond has a face value of \$1,000.)
- **3.** The 10 percent cumulative, convertible preferred stock was issued at the beginning of 2010 at par. Each share of preferred is convertible into four shares of common stock.
- 4. The average income tax rate is 40 percent.
- 5. The 500,000 shares of common stock were outstanding during the entire year.
- 6. Preferred dividends were not declared in 2010.
- 7. Net income was \$1,750,000 in 2010.
- 8. No bonds or preferred stock were converted during 2010.

COMPREHENSIVE EARNINGS PER SHARE EXAMPLE

Computation of Earnings per Share—Simple Capital Structure

Weighted-average number of common shares outstanding	
Earnings per common share	

Diluted Earnings Per Share

Steps for computing diluted earnings per share:

- Determine, for each dilutive security, the per share effect assuming exercise/conversion.
- 2. Rank the results from step 1 from smallest to largest earnings effect per share.
- 3. Beginning with the earnings per share based upon the weighted-average of common shares outstanding, recalculate earnings per share by adding the smallest per share effects from step 2. Continue this process so long as each recalculated earnings per share is smaller than the previous amount.

Per Share Effect of Options (Treasury-Stock Method), Diluted Earnings per Share

Number of shares under option Option price per share	50,000 × \$20
Proceeds upon assumed exercise of options	\$1,000,000
Average 2010 market price of common	<u>\$30</u>
Treasury shares that could be acquired with proceeds (\$1,000,000 ÷ \$30)	33,333
Excess of shares under option over treasury shares that could be repurchased (50,000 - 33,333)	16,667
Per share effect:	
$\frac{\text{Incremental Numerator Effect}}{\text{Incremental Denominator Effect}} = \frac{\text{None}}{16,667 \text{ shares}} =$	<u>\$0</u>

Per Share Effect of 8% Bonds (If-Converted Method), Diluted Earnings per Share

Interest expense for year (8% \times \$2,500,000) Income tax reduction due to interest (40% \times \$200,000) Interest expense avoided (net of tax)	\$200,000 <u>80,000</u> \$120,000
Number of common shares issued assuming conversion of bonds (2,500 bonds × 40 shares)	
Per share effect: $\frac{\text{Incremental Numerator Effect}}{\text{Incremental Denominator Effect}} = \frac{\$120,000}{100,000 \text{ shares}} =$	<u>\$1.20</u>

Per Share Effect of 10% Bonds (If-Converted Method), Diluted Earnings per Share

Interest expense for year (10% \times \$2,500,000) Income tax reduction due to interest (40% \times \$250,000)	\$250,000 _100,000	
Interest expense avoided (net of tax)	\$150,000	
Number of common shares issued assuming conversion of bonds (2,500 bonds $ imes$ 40 shares)	100,000	
Per share effect:		
$\frac{\text{Incremental Numerator Effect}}{\text{Incremental Denominator Effect}} = \frac{\$150,000}{100,000 \text{ shares}} =$	<u>\$1.50</u>	

Per Share Effect of 10% Convertible Preferred (If-Converted Method), Diluted Earnings per Share

Illustration 16-86

Dividend requirement on cumulative preferred (25,000 shares \times \$10) Income tax effect (dividends not a tax deduction) Dividend requirement avoided	\$250,000 none \$250,000
Number of common shares issued assuming conversion of preferred (4 $ imes$ 25,000 shares)	100,000
Per share effect:	
$\frac{\text{Incremental Numerator Effect}}{\text{Incremental Denominator Effect}} = \frac{\$250,000}{100,000 \text{ shares}} =$	\$2.50

Ranking of per Share Effects (Smallest to Largest), Diluted Earnings per Share

Illustration 16-B7

	Effect per Share
1. Options	\$ 0
2. 8% convertible bonds	1.20
3. 10% convertible bonds	1.50
4. 10% convertible preferred	2.50

Recomputation of EPS Using Incremental Effect of Options

Illustration 16-B8

Options	
Income applicable to common stockholders Add: Incremental numerator effect of options	\$1,500,000 none
Total	\$1,500,000
Weighted-average number of common shares outstanding Add: Incremental denominator effect of options (Illustration 16B-3)	500,000 16,667
Total	516,667
Recomputed earnings per share (\$1,500,000 ÷ 516,667 shares)	\$2.90

The effect of the options is dilutive.

Recomputation of EPS Using Incremental Effect of 8% Convertible Bonds

Illustration 16-B9

8% Convertible Bonds	
Numerator from previous calculation	\$1,500,000
Add: Interest expense avoided (net of tax)	120,000
Total	\$1,620,000
Denominator from previous calculation (shares)	516,667
Add: Number of common shares assumed issued upon conversion of bonds	100,000
Total	616,667
Recomputed earnings per share (\$1,620,000 ÷ 616,667 shares)	\$2.63

The effect of the 8% convertible bonds is dilutive.

Recomputation of EPS Using Incremental Effect of 10%

Convertible Bonds

Illustration 16-B10

10% Convertible Bonds	
Numerator from previous calculation	\$1,620,000
Add: Interest expense avoided (net of tax)	150,000
Total	\$1,770,000
Denominator from previous calculation (shares)	616,667
Add: Number of common shares assumed issued upon conversion of bonds	100,000
Total	716,667
Recomputed earnings per share (\$1,770,000 ÷ 716,667 shares)	<u>\$2.47</u>

The effect of the 10% convertible bonds is dilutive.

Recomputation of EPS Using Incremental Effect of 10%

Convertible Preferred

Illustration 16-B11

10% Convertible Preferred		
Numerator from previous calculation	\$1,770,000	
Add: Dividend requirement avoided	250,000	
Total	\$2,020,000	
Denominator from previous calculation (shares)	716,667	
Add: Number of common shares assumed issued upon conversion of preferre	ed <u>100,000</u>	
Total	<u>816,667</u>	
Recomputed earnings per share (\$2,020,000 ÷ 816,667 shares)	\$2.47	

The effect of the 10% convertible preferred is NOT dilutive.

Finally, Webster Corporation's disclosure of earnings per share on its income statement.

Illustration 16-B12

Net income	<u>\$1,750,000</u>
Basic earnings per common share (Note X)	\$3.00
Diluted earnings per common share	\$2.47

The effect of the 10% convertible preferred is NOT dilutive.

COMPREHENSIVE EARNINGS PER SHARE EXAMPLE

Assume that Barton Company provides the following information.

Illustration 16-B13

Barton Company Data

Income from continuing operations Loss from discontinued operations Net loss	\$2,400,000 3,600,000 \$1,200,000
Weighted-average shares of common stock outstanding Potential common stock	1,000,000 200,000

Barton reports basic and dilutive earnings per share as follows.

Basic ar	nd
Diluted	EPS

В	asic earnings per share Income from continuing operations Loss from discontinued operations Net loss	\$2.40 3.60 \$1.20
D	iluted earnings per share Income from continuing operations Loss from discontinued operations Net loss	\$2.00 3.00 \$1.00

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