

**E 17-7**

**(a)**

**Earnings per common share:**

<b>Income before loss from discontinued operations*</b>	<b>\$3.84</b>
<b>Loss from discontinued operations, net of tax**</b>	<b><u>(.32)</u></b>
<b>Net income***</b>	<b><u>\$3.52</u></b>

**Income data:**

<b>Income before discontinued operations</b>	<b>\$5,000,000</b>
<b>Deduct \$4 per share dividend on preferred shares</b>	<b><u>200,000</u></b>
<b>Income to common before discontinued operations</b>	<b>4,800,000</b>
<b>Deduct discontinued operations loss, net of tax</b>	<b><u>400,000</u></b>
<b>Net income available for common shareholders</b>	<b><u>\$4,400,000</u></b>

<u>Dates Outstanding</u>	<u>Shares Outstanding</u>	<u>Fraction of Year</u>	<u>Weighted Shares</u>
January 1–April 1	500,000	3/12	125,000
April 1–December 31	1,500,000	9/12	<u>1,125,000</u>
<b>Weighted average number of shares outstanding</b>			<b><u>1,250,000</u></b>

\*\$4,800,000 ÷ 1,250,000 shares = \$3.84 per share  
(income before discontinued operations loss)

\*\*\$400,000 ÷ 1,250,000 shares = \$.32 per share  
(discontinued operations loss net of tax)

\*\*\*\$4,400,000 ÷ 1,250,000 shares = \$3.52 per share  
(net income)

**E 17-7 (CONTINUED)**

**(b)**

**Earnings per common share:**

<b>Income before loss from discontinued operations*</b>	<b>\$3.49</b>
<b>Loss from discontinued operations, net of tax**</b>	<b><u>(.29)</u></b>
<b>Net income***</b>	<b><u>\$3.20</u></b>

<u>Dates</u> <u>Outstanding</u>	<u>Shares</u> <u>Outstanding</u>	<u>Resta-</u> <u>tement</u>	<u>Fraction</u> <u>of Year</u>	<u>Weighted</u> <u>Shares</u>
Jan. 1–Apr. 1	500,000	1.1	3/12	137,500
Apr. 1–Sep. 1	1,500,000	1.1	5/12	687,500
Sep. 1–Dec. 31	1,650,000		4/12	<u>550,000</u>
<b>Weighted average number of shares outstanding</b>				<b><u>1,375,000</u></b>

**\*\$4,800,000 ÷ 1,375,000 shares = \$3.49 per share  
(income before discontinued operations loss)**

**\*\*\$400,000 ÷ 1,375,000 shares = \$.29 per share  
(discontinued operations loss net of tax)**

**\*\*\*\$4,400,000 ÷ 1,375,000 shares = \$3.20 per share  
(net income)**

**E 17-8**

**(a)**

<u>Event</u>	<u>Dates Outstanding</u>	<u>Shares Outstanding</u>	<u>Fraction of Year</u>	<u>Weighted Shares</u>
Beginning balance	Jan. 1–April 1	900,000	3/12	225,000
Issued shares	April 1–Oct. 1	1,450,000	6/12	725,000
Reacquired shares	Oct. 1–Dec. 31	1,140,000	3/12	<u>285,000</u>
Weighted average number of shares outstanding—unadjusted				1,235,000
Stock dividend, 2/15/18				<u>1.05</u>
Weighted average number of shares outstanding—adjusted				<u><u>1,296,750</u></u>
Net income		\$2,130,000		
Preferred dividend (280,000 X \$50 X 7%)		<u>(980,000)</u>		
		<u><u>\$1,150,000</u></u>		

**Earnings per share for 2017:**

$$\frac{\text{Net income applicable to common shares}}{\text{Weighted average number of shares outstanding}} = \frac{\$1,150,000}{1,296,750} = \$0.89$$

## **E 17-8 (CONTINUED)**

- (b) Dividend arrears on preferred shares of prior years that are paid in the current year do not affect the calculation of earnings per share. The arrears are outstanding as of December 31, 2017, but the earnings per share calculation of the prior year has taken into account the reduction from income of one year's entitlement for the preferred dividends, whether paid or not. This is the case because the preferred shares are cumulative.**

**The December 31, 2017 notes to financial statements would reveal, as a matter of subsequent event disclosure, the details of the payment of the dividend arrears along with the declaration of the 5% stock dividend. The note would also mention why the effect of the stock dividend was included retroactively in the calculation of the weighted average number of shares outstanding for 2017.**

- (c) As stated in (b) the annual dividend entitlement for dividends is taken as a deduction from income in the numerator of the EPS ratio each year (for that year only) whether the dividend is declared or not. The calculation approach for earnings per share will remain unchanged despite the fact that there are two years of dividend arrears.**

E 17-15

(a)

<u>Basic Earnings Per Share</u>	<u>Income</u>	<u>Shares</u>	<u>EPS</u>
Net Income	\$50,000		
Dividends on preferred shares (\$100,000 X 4%)	<u>(4,000)</u>		
Basic EPS	<u>\$46,000</u>	<u>10,000</u>	<u>\$4.60</u>

- (b) To determine the dilutive effect of the convertible instruments, an assumption (generally referred to as the if-converted method) is made that all of the convertible instruments (both the bonds and the preferred shares in this case) are converted at the earliest date that they could have been during the year. The effects of this assumption are twofold: (1) if the bonds are converted then there will be no interest expense (thus resulting in more income tax expense), and similarly if the preferred shares are converted there will be no preferred dividends paid, and (2) there will be additional common shares outstanding during the year.
- (c) Individual earnings per share calculations are done for each potentially dilutive security to determine if the securities are in fact dilutive, when compared to basic earnings per share of \$4.60. Only dilutive securities will be used in the calculation of diluted earnings per share. The effect of conversion/exercise of each security will be applied to the calculation in the sequence of most dilutive to least dilutive, in order to arrive at the most diluted earnings per share result.

## E 17-15 (CONTINUED)

(c) (continued)

**For 7% convertible bonds:**

Maturity value of bonds	\$200,000
Stated rate	X 7%
Interest expense	<u>14,000</u>
1 – tax rate (25%)	X .75
After-tax interest that would have been saved	<u>10,500</u>

Increase in diluted earnings per share denominator:  
200 X 40 = 8,000 additional shares

Individual EPS calculation:  $\$10,500 / 8,000 = \$1.31 < \$4.60$   
Ranked most dilutive.

**For convertible preferred shares:**

Dividends avoided from conversion 4% X \$100,000 shares = \$4,000  
divided by 2,000 additional common shares (1,000 preferred  
shares X two shares) = \$2.00 < \$4.60 — Ranked least dilutive.

<u>Diluted Earnings Per Share</u>	<u>Income</u>	<u>Shares</u>	<u>EPS</u>
Basic	\$46,000	10,000	\$4.60
Bonds	<u>10,500</u>	<u>8,000</u>	
	\$56,500	18,000	\$3.14
Preferred shares	<u>4,000</u>	<u>2,000</u>	
Diluted Earnings Per Share	<u>\$60,500</u>	<u>20,000</u>	<u>\$3.03</u>

**Disclaimer:** For simplicity, ignore the IFRS requirement to record the debt and equity components of the bonds separately.

## **EXERCISE 17-15 (CONTINUED)**

- (d) When Hayward Corporation issued the 7% convertible bonds, the company's interest rate on straight debt was higher than 7%. The convertible bonds were issued at par, meaning that the market rate of interest on the convertible bonds was equal to the stated rate of interest (7%). The conversion privilege entices the investor to accept a lower interest rate than would normally be the case on a straight debt issue, therefore the market rate of interest on the convertible bonds (7%) would be lower than the company's interest rate on straight debt at the time of issuance.**

**E 17-17**

**(a) The warrants are dilutive because the option price (\$10) is less than the average market price (\$23).**

**(b) Basic EPS = \$4.80**  
**(\$480,000 ÷ 100,000 shares)**

**(c) Diluted EPS = \$4.36**  
**(\$480,000 ÷ 110,174 shares)**

<b>Proceeds from assumed exercise:</b>	
<b>(18,000 warrants X \$10 exercise price)</b>	<b>\$180,000</b>
<b>Treasury shares purchasable with proceeds:</b>	
<b>(\$180,000 ÷ \$23 average market price)</b>	<b>7,826</b>
<b>Incremental shares issued:</b>	
<b>(18,000 shares issued less 7,826 purchased)</b>	<b><u>10,174</u></b>

**P 17-3**

(a)

<u>Dates Outstanding</u>	<u>Shares Outstanding</u>	<u>Fraction of Year</u>	<u>Weighted Shares</u>
1/1–6/30	1,000,000	6/12	500,000
7/1–12/31	1,100,000	6/12	<u>550,000</u>
			<u>1,050,000</u>

$$\text{Basic EPS} = \frac{\$1,298,678}{1,050,000} = \underline{\underline{\$1.24}}$$

Proceeds from assumed exercise of 10,000  
call options (10,000 X \$30) \$300,000

Shares issued upon exercise 10,000  
Treasury shares purchasable (\$300,000 ÷ \$35) 8,571  
Incremental shares 1,429  
Incremental shares pro-rated to 6/12 714

$$\text{Diluted EPS} = \frac{\$1,298,678}{1,050,000 + 714} = \underline{\underline{\$1.24}}$$

The put options are not in the money since the company would be able to buy the shares at \$25, which is lower than the market price of \$35. The put options are not included in the calculation of diluted earnings per share.

The purchased call options are antidilutive since they will only be exercised when they are in the money and this will always be favourable to the company. They are therefore not included in the calculation of diluted earnings per share.

## P 17-3 (CONTINUED)

(a) (continued)

For purposes of calculating the individual earnings per share for the convertible bonds, to decide if there may be further dilution, the bonds are assumed to have been converted January 1, 2017. The income effect would be to add back the after-tax cost of the interest saved of \$250,000 and the denominator effect is to increase the number of shares by 50,000 (100,000 shares X 6/12). This yields an EPS of \$5.00 ( $\$250,000 / 50,000$ ) which is antidilutive and therefore excluded.

(b) Earnings per common share:

Basic earnings per share	<u>\$1.24</u>
Diluted earnings per share	<u>\$1.24</u>

Disclaimer: For simplicity, ignore the IFRS requirement to record the debt and equity components of the bonds separately.

**P 17-4**

(a)

<u>Basic Earnings Per Share</u>	<u>Income</u>	<u>Shares</u>	<u>EPS</u>
Net Income	\$1,298,678		
Dividends on preferred (200,000 X \$3)	<u>(600,000)</u>		
Basic EPS	<u>\$698,678</u>	<u>1,050,000</u>	<u>\$0.67</u>

(b) Diluted Earnings Per Share calculations:

For preferred shares:

Dividends avoided from conversion \$3 X 200,000 shares = \$600,000  
divided by 100,000 additional common shares pro-rated to 9 months =  
75,000 additional shares = \$8.00 > \$0.67

Antidilutive and therefore excluded from the diluted earnings per share calculation.

For 5% convertible bonds:

Maturity value (10,000 X \$1,000)	\$10,000,000
Stated rate	X 5%
Interest expense	500,000
1 – tax rate (30%)	X .70
After-tax interest	<u>\$ 350,000</u>

\$10,000,000/\$1,000 = 10,000 bonds

Increase in diluted earnings per share denominator:

10,000	
X 9	the most advantageous rate to the holder
<u>90,000</u>	

Individual EPS calculation: \$350,000 / 90,000 = \$3.89 > \$0.67

Antidilutive and therefore excluded from the diluted earnings per share calculation.

**P 17-4 (CONTINUED)**

(b) (continued)

<u>Diluted Earnings Per Share</u>	<u>Income</u>	<u>Shares</u>	<u>EPS</u>
Basic (a) above	\$698,678	1,050,000	\$0.67
Call Options (see P17-3)		714	
	<u>\$698,678</u>	<u>1,050,714</u>	\$0.66

Earnings per common share:

Basic earnings per share \$0.67

Diluted earnings per share \$0.66

Disclaimer: For simplicity, ignore the IFRS requirement to record the debt and equity components of the bonds separately