

## CHAPTER 16

## DILUTIVE SECURITIES AND EARNINGS PER SHARE

This IFRS Supplement provides expanded discussions of accounting guidance under International Financial Reporting Standards (IFRS) for the topics in Intermediate Accounting. The discussions are organized according to the chapters in *Intermediate Accounting* (13<sup>th</sup> or 14<sup>th</sup> Editions) and therefore can be used to supplement the U.S. GAAP requirements as presented in the textbook. Assignment material is provided for each supplement chapter, which can be used to assess and reinforce student understanding of IFRS.

## ACCOUNTING FOR CONVERTIBLE DEBT

Convertible debt is accounted for as a **compound instrument** because it contains both a liability and an equity component. IFRS requires that compound instruments be separated into their liability and equity components for purposes of accounting. [1] Companies use the “**with-and-without**” method to value compound instruments.

Illustration 16-1 identifies the components used in the with-and-without method.

Fair value of convertible debt at date of issuance (**with both debt and equity components**)

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Fair value of liability component at date of issuance, based on present value of cash flows

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Equity component at date of issuance (**without the debt component**)

**ILLUSTRATION 16-1**  
Convertible Debt Components

As indicated, the equity component is the residual amount after subtracting the liability component. IFRS does not permit companies to assign a value to the equity amount first and then determine the liability component. To do so would be inconsistent with the definition of equity, which is considered a residual amount. [2]

To implement the with-and-without approach, companies do the following:

1. First, determine the total fair value of the convertible debt *with* both the liability and equity component. **This is straightforward, as this amount is the proceeds received upon issuance.**
2. The company then determines the liability component by computing the net present value of all contractual future cash flows discounted at the market rate of interest. This market rate is the rate the company would pay on similar non-convertible debt.
3. In the final step, the company subtracts the liability component estimated in the second step from the fair value of the convertible debt (issue proceeds) to arrive at the equity component. That is, the equity component is the fair value of the convertible debt *without* the liability component

### U.S. GAAP PERSPECTIVE



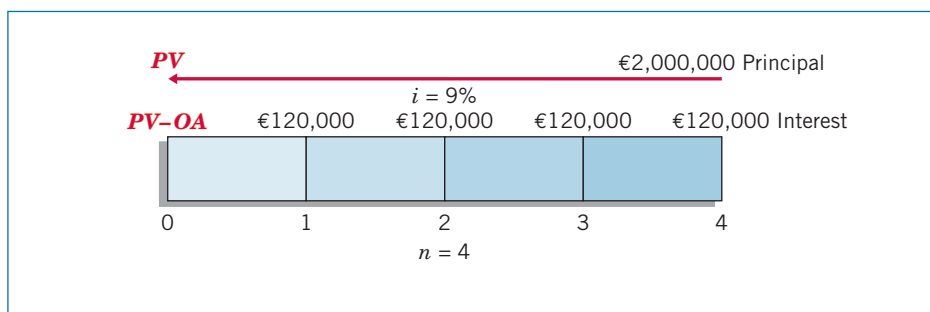
Under U.S. GAAP, all of the proceeds of convertible debt are recorded as long-term debt unless the settlement is in cash.

### Accounting at Time of Issuance

To illustrate the accounting for convertible debt, assume that **Roche Group** (DEU) issues 2,000 convertible bonds at the beginning of 2011. The bonds have a four-year term with a stated rate of interest of 6 percent, and are issued at par with a face value of €1,000 per bond (the total proceeds received from issuance of the bonds are €2,000,000). Interest is payable annually at December 31. Each bond is convertible into 250 ordinary shares with a par value of €1. The market rate of interest on similar non-convertible debt is 9 percent.

The time diagram in Illustration 16-2 depicts both the interest and principal cash flows.

**ILLUSTRATION 16-2**  
Time Diagram for Convertible Bond



The liability component of the convertible debt is computed as shown in Illustration 16-3.

**ILLUSTRATION 16-3**  
Fair Value of Liability Component of Convertible Bond

Present value of principal: €2,000,000 × .70843 (Table 6-2; n = 4, i = 9%)	€1,416,850
Present value of the interest payments: €120,000 × 3.23972 (Table 6-4; n = 4, i = 9%)	<u>388,766</u>
<b>Present value of the liability component</b>	<b><u>€1,805,616</u></b>

The equity component of Roche’s convertible debt is then computed as shown in Illustration 16-4.

**ILLUSTRATION 16-4**  
Equity Component of Convertible Bond

Fair value of convertible debt at date of issuance	€2,000,000
Less: Fair value of liability component at date of issuance	<u>1,805,616</u>
<b>Fair value of equity component at date of issuance</b>	<b><u>€ 194,384</u></b>

The journal entry to record this transaction is as follows.

Cash	2,000,000	
Bonds Payable		1,805,616
Share Premium—Conversion Equity		194,384

The liability component of Roche’s convertible debt issue is recorded as Bonds Payable. As shown in Chapter 14, the amount of the discount relative to the face value of the bond is amortized at each reporting period so at maturity, the Bonds Payable account is reported at €2,000,000 (face value). The equity component of the convertible bond is recorded in the Share Premium—Conversion Equity account and is reported in the equity section of the statement of financial position. Because this amount is considered part of contributed capital, it does not change over the life of the convertible.<sup>1</sup>

### Settlement of Convertible Bonds

We illustrate four settlement situations: (1) repurchase at maturity, (2) conversion at maturity, (3) conversion before maturity, and (4) repurchase before maturity.

**Repurchase at Maturity.** If the bonds are not converted at maturity, Roche makes the following entry to pay off the convertible debtholders.

Bonds Payable	2,000,000	
Cash		2,000,000
(To record the purchase of bonds at maturity)		

Because the carrying value of the bonds equals the face value, there is no gain or loss on repurchase at maturity. The amount originally allocated to equity of €194,384 either remains in the Share Premium—Conversion Equity account or is transferred to Share Premium—Ordinary.

<sup>1</sup>Transaction costs related to the liability and equity components are allocated in proportion to the proceeds received from the two components. For purposes of homework, use the Share Premium—Conversion Equity account to record the equity component. In practice, there may be considerable variance in the accounts used to record this component.

**Conversion of Bonds at Maturity.** If the bonds are converted at maturity, Roche makes the following entry.

Share Premium—Conversion Equity	194,384	
Bonds Payable	2,000,000	
Share Capital—Ordinary		500,000
Share Premium—Ordinary		1,694,384
(To record the conversion of bonds at maturity)		

As indicated, Roche records a credit to Share Capital—Ordinary for €500,000 (2,000 bonds × 250 shares × €1 par) and the remainder to Share Premium—Ordinary for €1,694,384. There is no gain or loss on conversion at maturity. The original amount allocated to equity (€194,384) is transferred to the Share Premium—Ordinary account. As a result, Roche's equity has increased by a total of €2,194,384 through issuance and conversion of the convertible bonds. This accounting approach is often referred to as the **book value method** in that the carrying amount (book value) of the bond and related conversion equity determines the amount in the ordinary equity accounts.

**Conversion of Bonds before Maturity.** What happens if bonds are converted before maturity? To understand the accounting, we again use the Roche Group example. A schedule of bond amortization related to Roche's convertible bonds is shown in Illustration 16-5.

<b>SCHEDULE OF BOND AMORTIZATION</b>				
<b>EFFECTIVE-INTEREST METHOD</b>				
<b>6% BOND DISCOUNTED AT 9%</b>				
Date	Cash Paid	Interest Expense	Discount Amortized	Carrying Amount of Bonds
1/1/11				€1,805,616
12/31/11	€120,000	€162,506	€42,506	1,848,122
12/31/12	120,000	166,331	46,331	1,894,453
12/31/13	120,000	170,501	50,501	1,944,954
12/31/14	120,000	175,046	55,046	2,000,000

**ILLUSTRATION 16-5**  
Convertible Bond  
Amortization Schedule

Assuming that Roche converts its bonds into ordinary shares on December 31, 2012, Roche debits the Bonds Payable account for its carrying value of €1,894,453 (see Illustration 16-5). In addition, Roche credits Share Capital—Ordinary for €500,000 (2,000 × 250 × €1) and credits Share Premium—Ordinary for €1,588,837. The entry to record this conversion is as follows.

Share Premium—Conversion Equity	194,384	
Bonds Payable	1,894,453	
Share Capital—Ordinary		500,000
Share Premium—Ordinary		1,588,837
(To record the conversion of bonds before maturity)		

There is no gain or loss on conversion before maturity: The original amount allocated to equity (€194,384) is transferred to the Share Premium—Ordinary account.

**Repurchase before Maturity.** In some cases, companies decide to repurchase the convertible debt before maturity. The approach used for allocating the amount paid upon repurchase follows the approach used when the convertible bond was originally issued. That is, Roche determines the fair value of the liability component of the convertible bonds at December 31, 2012, and then subtracts this amount from the fair value of the convertible bond issue (including the equity component) to arrive at the value for the equity. After this allocation is completed:

1. The difference between the consideration allocated to the liability component and the carrying amount of the liability is recognized as a gain or loss, and
2. The amount of consideration relating to the equity component is recognized (as a reduction) in equity. [3]

To illustrate, instead of converting the bonds on December 31, 2012, assume that Roche repurchases the convertible bonds from the bondholders. Pertinent information related to this conversion is as follows.

- Fair value of the convertible debt (including both liability and equity components), based on market prices at December 31, 2012, is €1,965,000.
- The fair value of the liability component is €1,904,900. This amount is based on computing the present value of a non-convertible bond with a two-year term (which corresponds to the shortened time to maturity of the repurchased bonds.)

We first determine the gain or loss on the liability component, as computed in Illustration 16-6.

#### ILLUSTRATION 16-6

Gain or Loss on Debt Repurchase

Present value of liability component at December 31, 2012 (given above)	€ 1,904,900
Carrying value of liability component at December 31, 2012 (per Illustration 16-5)	<u>(1,894,453)</u>
<b>Loss on repurchase</b>	<b>€ 10,447</b>

Roche has a loss on this repurchase because the value of the debt extinguished is greater than its carrying amount. To determine any adjustment to the equity, we compute the value of the equity as shown in Illustration 16-7.

#### ILLUSTRATION 16-7

Equity Adjustment on Repurchase of Convertible Bonds

Fair value of convertible debt at December 31, 2012 ( <b>with equity component</b> )	€1,965,000
Less: Fair value of liability component at December 31, 2012 (similar 2-year non-convertible debt)	<u>1,904,900</u>
<b>Fair value of equity component at December 31, 2012 (without debt component)</b>	<b>€ 60,100</b>

Roche makes the following compound journal entry to record the entire repurchase transaction.

Bonds Payable	1,894,453	
Share Premium—Conversion Equity	60,100	
Loss on Repurchase	10,447	
Cash		1,965,000
(To record the repurchase of convertible bonds)		

In summary, the repurchase results in a loss related to the liability component and a reduction in Share Premium—Conversion Equity. The remaining balance in Share Premium—Conversion Equity of €134,294 (€194,384 – €60,000) is often transferred to Share Premium—Ordinary upon the repurchase.

## Induced Conversions

Sometimes, the issuer wishes to encourage prompt conversion of its convertible debt to equity securities in order to reduce interest costs or to improve its debt to equity ratio. Thus, the issuer may offer some form of additional consideration (such as cash or ordinary shares), called a “sweetener,” to **induce conversion**. The issuing company reports the sweetener as an expense of the current period. Its amount is the fair value of the additional securities or other consideration given.

Assume that Helloid, Inc. has outstanding \$1,000,000 par value convertible debentures convertible into 100,000 ordinary shares (\$1 par value). Helloid wishes to reduce its annual interest cost. To do so, Helloid agrees to pay the holders of its convertible debentures an additional \$80,000 if they will convert. Assuming conversion occurs, Helloid makes the following entry.

Conversion Expense	80,000	
Bonds Payable	1,000,000	
Share Capital—Ordinary		100,000
Share Premium—Ordinary		900,000
Cash		80,000

Helloid records the additional \$80,000 as **an expense of the current period** and not as a reduction of equity. [4]

Some argue that the cost of a conversion inducement is a cost of obtaining equity capital. As a result, they contend that companies should recognize the cost of conversion as a cost of (a reduction of) the equity capital acquired and not as an expense. However, the IASB indicated that when an issuer makes an additional payment to encourage conversion, the payment is for a service (bondholders converting at a given time) and should be reported as an expense.

## Employee Share-Purchase Plans

**Employee share-purchase plans (ESPPs)** generally permit all employees to purchase shares at a discounted price for a short period of time. The company often uses such plans to secure equity capital or to induce widespread ownership of its ordinary shares among employees. **These plans are considered compensatory and should be recorded as expense over the service period.**

To illustrate, assume that Masthead Company offers all its 1,000 employees the opportunity to participate in an employee share-purchase plan. Under the terms of the plan, the employees are entitled to purchase 100 ordinary shares (par value £1 per share) at a 20 percent discount. The purchase price must be paid immediately upon acceptance of the offer. In total, 800 employees accept the offer, and each employee purchases on average 80 shares. That is, the employees purchase a total of 64,000 shares. The weighted-average market price of the shares at the purchase date is £30 per share, and the weighted-average purchase price is £24 per share. The entry to record this transaction is as follows.

Cash (64,000 × £24)	1,536,000	
Compensation Expense [64,000 × (£30 – £24)]	384,000	
Share Capital—Ordinary (64,000 × £1)		64,000
Share Premium—Ordinary		1,856,000
(Issue shares in an employee share-purchase plan)		

The IASB indicates that there is no reason to treat broad-based employee share plans differently from other employee share plans. Some have argued that because these plans are used to raise capital, they should not be compensatory. However, IFRS requires recording expense for these arrangements. The Board notes that because these arrangements are available only to employees, it is sufficient to conclude that the benefits provided represent employee compensation.<sup>2</sup> [5]

### U.S. GAAP PERSPECTIVE



Under U.S. GAAP, these plans are often considered non-compensatory and therefore no compensation is recorded. Certain conditions must be met—the most important being that the discount generally cannot exceed 5%.

## IFRS

## AUTHORITATIVE LITERATURE

### Authoritative Literature References

- [1] International Accounting Standard 32, *Financial Instruments: Presentation* (London, U.K.: International Accounting Standards Committee Foundation, 2003), paras. 28–32.
- [2] International Accounting Standard 32, *Financial Instruments: Presentation* (London, U.K.: International Accounting Standards Committee Foundation, 2003), par. BC29.
- [3] International Accounting Standard 32, *Financial Instruments: Presentation* (London, U.K.: International Accounting Standards Committee Foundation, 2003), par. AG34.
- [4] International Accounting Standard 32, *Financial Instruments: Presentation* (London, U.K.: International Accounting Standards Committee Foundation, 2003), par. 36.
- [5] International Financial Reporting Standard 2, *Share-Based Payment* (London, U.K.: International Accounting Standards Committee Foundation, 2004), par. BC11.

<sup>2</sup>As indicated, employee share-purchase plans offer company shares to workers through payroll deduction, often at significant discounts. Unfortunately, many employees do not avail themselves of this benefit. Hopefully, if you have the opportunity to purchase your company's shares at a significant discount, you will take advantage of the plan. By not participating, you are "leaving money on the table."

## QUESTIONS

1. Bridgewater Corp. offered holders of its 1,000 convertible bonds a premium of €160 per bond to induce conversion into ordinary shares. Upon conversion of all the bonds, Bridgewater Corp. recorded the €160,000 premium as a reduction of Share Premium—Ordinary. Comment on Bridgewater's treatment of the €160,000 "sweetener."
2. Explain how the conversion feature of convertible debt has a value (a) to the issuer and (b) to the purchaser.
3. What are the arguments for giving separate accounting recognition to the conversion feature of debentures?
4. Four years after issue, debentures with a face value of \$1,000,000 and book value of \$960,000 are tendered for conversion into 80,000 ordinary shares immediately after an interest payment date. At that time, the market price of

the debentures is 104, and the ordinary shares are selling at \$14 per share (par value \$10). The company records the conversion as follows.

Bonds Payable	960,000	
Share Capital—Ordinary		800,000
Share Premium—Ordinary		160,000

Discuss the propriety of this accounting treatment.

5. Cordero Corporation has an employee share-purchase plan which permits all full-time employees to purchase 10 ordinary shares on the third anniversary of their employment and an additional 15 shares on each subsequent anniversary date. The purchase price is set at the market price on the date purchased less a 10% discount. How is this discount accounted for by Cordero?

## BRIEF EXERCISES

**BE16-1** Archer Company issued £4,000,000 par value, 7% convertible bonds at 99 for cash. The net present value of the debt without the conversion feature is £3,800,000. Prepare the journal entry to record the issuance of the convertible bonds.

**BE16-2** Petrenko Corporation has outstanding 2,000 €1,000 bonds, each convertible into 50 shares of €10 par value ordinary shares. The bonds are converted on December 31, 2010. The bonds payable has a carrying value of €1,950,000 and conversion equity of €20,000. Record the conversion using the book value method.

## EXERCISES

**E16-1 (Issuance and Repurchase of Convertible Bonds)** Angela Corporation issues 2,000 convertible bonds at January 1, 2011. The bonds have a three year life, and are issued at par with a face value of €1,000 per bond, giving total proceeds of €2,000,000. Interest is payable annually at 6 percent. Each bond is convertible into 250 ordinary shares (par value of €1). When the bonds are issued, the market rate of interest for similar debt without the conversion option is 8%.

### Instructions

- (a) Compute the liability and equity component of the convertible bond on January 1, 2011.
- (b) Prepare the journal entry to record the issuance of the convertible bond on January 1, 2011.
- (c) Prepare the journal entry to record the repurchase of the convertible bond for cash at January 1, 2014, its maturity date.

**E16-2 (Issuance and Repurchase of Convertible Bonds)** Assume the same information in E16-1, except that Angela Corporation converts its convertible bonds on January 1, 2012.

### Instructions

- (a) Compute the carrying value of the bond payable on January 1, 2012.
- (b) Prepare the journal entry to record the conversion on January 1, 2012.
- (c) Assume that the bonds were repurchased on January 1, 2012, for €1,940,000 cash instead of being converted. The net present value of the liability component of the convertible bonds on January 1, 2012, is €1,900,000. Prepare the journal entry to record the repurchase on January 1, 2012.

**E16-3 (Issuance and Repurchase of Convertible Bonds)** On January 1, 2011, Cai Company issued a 10% convertible bond at par, with a face value of ¥100,000, maturing on January 1, 2021. The convertible bond is convertible into ordinary shares of Cai at a conversion price of ¥2,500 per share. Interest is payable semiannually. At date of issue, Cai could have issued non-convertible debt with a 10-year term bearing an interest rate of 11%.

**Instructions**

- Prepare the journal entry to record the issuance of the convertible debt on January 1, 2011.
- On January 1, 2014, Cai makes a tender offer to the holder of the convertible debt to repurchase the bond for ¥112,000, which the holder accepts. At the date of repurchase, Cai could have issued non-convertible debt with a 7-year term at an effective-interest rate of 8%. Prepare the journal entry to record this repurchase on January 1, 2014.

**E16-4 (Issuance, Conversion, Repurchase of Convertible Bonds)** On January 1, 2011, Lin Company issued a convertible bond with a par value of \$50,000 in the market for \$60,000. The bonds are convertible into 6,000 ordinary shares of \$1 per share par value. The bond has a 5-year life and has a stated interest rate of 10% payable annually. The market interest rate for a similar non-convertible bond at January 1, 2011, is 8%. The liability component of the bond is computed to be \$53,993. The following bond amortization schedule is provided for this bond.

EFFECTIVE-INTEREST METHOD 10% BOND DISCOUNTED AT 8%				
Date	Cash Paid	Interest Expense	Premium Amortized	Carrying Amount of Bonds
1/1/11				\$53,993
12/31/11	\$5,000	\$4,319	\$681	53,312
12/31/12	5,000	4,265	735	52,577
12/31/13	5,000	4,206	794	51,783
12/31/14	5,000	4,143	857	50,926
12/31/15	5,000	4,074	926	50,000

**Instructions**

- Prepare the journal entry to record the issuance of the convertible bond on January 1, 2011.
- Prepare the journal entry to record the accrual of interest on December 31, 2012.
- Assume that the bonds were converted on December 31, 2013. The fair value of the liability component of the bond is determined to be \$54,000 on December 31, 2013. Prepare the journal entry to record the conversion on December 31, 2013. Assume that the accrual of interest related to 2013 has been recorded.
- Assume that the convertible bonds were repurchased on December 31, 2013, for \$55,500 instead of being converted. As indicated, the liability component of the bond is determined to be \$54,000 on December 31, 2013. Assume that the accrual of interest related to 2013 has been recorded.
- Assume that the bonds matured on December 31, 2015, and Lin repurchased the bonds. Prepare the entry(ies) to record this transaction.

**E16-5 (Conversion of Bonds)** Schuss Inc. issued €3,000,000 of 10%, 10-year convertible bonds on April 1, 2010, at 98. The bonds were dated April 1, 2010, with interest payable April 1 and October 1. Bond discount is amortized semiannually using the effective-interest method. The net present value of the bonds without the conversion feature discounted at 11% (its market rate) was €2,800,000.

On April 1, 2011, €1,000,000 of these bonds were converted into 30,000 shares of €20 par value ordinary shares. Accrued interest was paid in cash at the time of conversion.

**Instructions**

- Prepare the entry to record the issuance of the convertible bond on April 1, 2010.
- Prepare the entry to record the interest expense at October 1, 2010.
- Prepare the entry(ies) to record the conversion on April 1, 2011. (The book value method is used.)

**E16-6 (Share-Based Compensation)** Assume that Sarazan Company has a share-option plan for top management. Each share option represents the right to purchase a \$1 par value ordinary share in the future at a price equal to the fair value of the shares at the date of the grant. Sarazan has 5,000 share options outstanding, which were granted at the beginning of 2010. The following data relate to the option grant.

Exercise price for options	\$40
Market price at grant date (January 1, 2010)	\$40
Fair value of options at grant date (January 1, 2010)	\$6
Service period	5 years

**Instructions**

- Prepare the journal entry(ies) for the first year of the share-option plan.
- Prepare the journal entry(ies) for the first year of the plan assuming that, rather than options, 700 shares of restricted shares were granted at the beginning of 2010.

- (c) Now assume that the market price of Sarazan shares on the grant date was \$45 per share. Repeat the requirements for (a) and (b).
- (d) Sarazan would like to implement an employee share-purchase plan for rank-and-file employees, but it would like to avoid recording expense related to this plan. Explain how employee share-purchase plans are recorded.

## USING YOUR JUDGMENT

### FINANCIAL REPORTING

#### Financial Reporting Problem

##### Marks and Spencer plc (M&S)

The financial statements of **M&S** can be accessed at the book's companion website, [www.wiley.com/college/kiesoifrs](http://www.wiley.com/college/kiesoifrs).

##### Instructions

Refer to M&S's financial statements and the accompanying notes to answer the following questions.

- (a) Under M&S's share-based compensation plan, share options are granted annually to key managers and directors.
- (1) How many options were granted during 2008 under the plan?
  - (2) How many options were exercisable at March 29, 2008?
  - (3) How many options were exercised in 2008, and what was the average price of those exercised?
  - (4) How many years from the grant date do the options expire?
  - (5) To what accounts are the proceeds from these option exercises credited?
  - (6) What was the number of outstanding options at March 29, 2008, and at what average exercise price?
- (b) What number of diluted weighted-average shares outstanding was used by M&S in computing earnings per share for 2008 and 2007? What was M&S's diluted earnings per share in 2008 and 2007?
- (c) What other share-based compensation plans does M&S have?



### IFRS BRIDGE TO THE PROFESSION

#### Professional Research

Richardson Company is contemplating the establishment of a share-based compensation plan to provide long-run incentives for its top management. However, members of the compensation committee of the board of directors have voiced some concerns about adopting these plans, based on news accounts related to a recent accounting standard in this area. They would like you to conduct some research on this recent standard so they can be better informed about the accounting for these plans.

##### Instructions

Access the IFRS authoritative literature at the IASB website (<http://eifrs.iasb.org/>). When you have accessed the documents, you can use the search tool in your Internet browser to respond to the following questions. (Provide paragraph citations.)

- (a) Identify the authoritative literature that addresses the accounting for share-based payment compensation plans.
- (b) Briefly discuss the objectives for the accounting for share-based compensation. What is the role of fair value measurement?
- (c) The Richardson Company board is also considering an employee share-purchase plan, but the Board does not want to record expense related to the plan. What are the IFRS requirements for the accounting for an employee share-purchase plan?