

CHAPTER 16: COMPLEX FINANCIAL INSTRUMENTS

1. Derivatives

Financial instruments are contracts that create both a financial asset for one party and a financial liability or equity instrument for another party.¹ Financial Instruments encompass: (1) *Primary financial instruments*, which are Instruments that include basic financial assets and liabilities, such as receivables and payables, as well as equity instruments like common shares.² (Note: The focus of the previous chapters was on the accounting for primary financial instruments.); (2) *Derivative instruments* intended to transfer risks from one party to another party, whereby only a nominal upfront investment is generally required. Significantly, the value of derivatives is *derived from the value of something else*; that is, the value of derivatives is a function of an underlying primary instrument, index, or non-financial item (i.e., “*underlying*”). The textbook specified that derivatives are intended to serve 2 purposes.

Managing Risks

Derivatives are used by companies to *manage various types of risk*.³ The company will weigh the expected costs/benefits of purchasing derivatives. One cost associated with the acquisition of derivatives is the difficulty of accounting for said derivatives. The user might have a hard time evaluating financial statements issued by companies that are heavily invested in derivatives. By extension, the company (all else being equal) would have a more difficult time generating capital from capital markets. However the company can use derivatives to manage (i.e., hedge) its exposure to credit risk, liquidity risk, and market risk. (Refer to pages 998 to 1000 for analyses on these 3 specific types of risks.) Hedging is a strategy, whereby the company enters into a derivatives contract, and the value of the contract is inversely related to some good or commodity the company has an interest in. A company that buys and sells gold, for instance, has an interest in the price of gold. It might acquire derivatives to hedge against fluctuations in the price of gold.

The textbook outlines a simple hedging strategy on page 100:

- McCain Food Ltd. sells potatoes to other companies, like McDonalds.
- Potatoes are a commodity. The value of commodities fluctuates.
- McCain Food Ltd. wants to insulate itself from these price fluctuations.
- McCain can moderate its risk exposure is by entering into a contract, whereby McDonalds agrees to buy potatoes in the future from McCain at the current price of potatoes. This price is known as the *strike price*.
- This is an example of a *forward contract*, whereby both parties commit upfront to buy/sell the commodity in the future at the strike price.
- If the price of potatoes declines, then, McCain sells potatoes to McDonalds at a premium. McCain has successfully protected itself from the reduced cost of potatoes.
- If the price of potatoes increases, then, McCain Food does not benefit from the increased selling price. It sells the potatoes to McDonalds at a discount.
- Regardless of the outcome (i.e., price of potatoes increases or decreases), both McCain and McDonalds benefits, insofar as each party to the contract is buying/selling potatoes at a price that yields an acceptable profit-level.

Speculators and Arbitrageurs as Derivative Users

According to the Bank for International Settlements, the total notional value of derivatives contracts around the world has ballooned to an astounding 710 trillion dollars (\$710,000,000,000,000).⁴ *Speculators* purchase derivatives in the hopes of generating a profit. They do not use derivatives to manage risk; they actually expose themselves to risk with the aim of reaping substantial returns. Returning to the case of MacDonal’d’s and McCain Food Ltd: A speculator might decide to purchase a forward contract that enables them to sell potatoes at the strike price. If they expect the price of potatoes to decline, they might buy the forwards contract to generate a quick profit. Provided that the price of potatoes declines, then the speculator will sell the derivative to another speculator, who

¹ Retrieved from page 1600 of the textbook.

² Refer to page 1603 of the textbook.

³ See pages 998 and 999 of the textbook.

⁴ Retrieved September 28, 2015 from <http://www.globalresearch.ca/the-size-of-the-derivatives-bubble-hanging-over-the-global-economy-hits-a-record-high/5384096>.

might expect the price of potatoes to decline even further relative to the strike price. To sum up, the forwards contract is not bought and sold for the purposes of mitigating risk. One important note: The speculator never takes delivery of the underlying (e.g., potatoes).

Arbitrageurs look for price discrepancies between derivatives markets and markets for the associated underlying primary instruments, indices, or non-financial items. Opportunities for arbitrage arise when things are undervalued in a particular market. The arbitrageur will buy undervalued things and then sell them at their “correct” value in another market. The difference between the two prices is referred to as the *spread*. Returning to the case of MacDonald’s and McCain Food Ltd: The arbitrageur might simultaneously trade in potatoes forwards and potatoes (i.e., the underlying commodity). The arbitrageur’s aim is to earn a profit whenever there are incongruences between the financial market and commodities market due to something called information asymmetry (i.e., some people know more about certain things than other people know about those things).

Accounting for Derivatives

Options and Warrants (E16-2, P16-1)

A *purchased option* is a contract (i.e., buyer pays a fee to the seller), and the contract gives the buyer (the owner, purchaser, holder) the right (but not the obligation) to buy/sell the underlying asset/instrument at the *strike price* (*exercise price*) within the *exercise period*. Holders purchase 2 types of options. A *purchased call option* gives the holder the right to buy the underlying. As an example, a purchased call option might give the holder the right to purchase a specific number of Company X’s shares for a specific price within the exercise period. On the other hand, a *purchased put option* gives the holder the right to sell the underlying. The holder, for instance, might have the right to sell a specific number of Company X’s shares for a specific price within the exercise period. It is worth re-emphasizing that purchased options give the holder the right to buy or sell the underlying. The holders, though, are not obligated to exercise the option. In fact, the option will only be exercised in the event that it gives rise to the economic benefit to the holder.

Conversely, individuals/organizations sell options. This process is called writing an option. It is worth emphasizing that the seller (the writer) is obliged to honour the terms of the written option. To put it another way, the seller does not have the right to honor the option; the seller is obliged to honour the option when the holder exercises the option. There are two types of *written options*, and they are *written call options* and *written put options*. A *written call option* sees the seller (the writer) promise to buy the underlying for a predetermined price within the exercise period. A *written put option* sees the seller promise to sell the underlying for a predetermined price within the exercise period.

What is the value of an option? The value of an option = Intrinsic Value + Time Value. (Refer to page 1004 of the textbook.) The *intrinsic value* of an option is an amount equal to the difference, at specific point in time, between the market price of the underlying and the strike/exercise price. An option’s intrinsic value is simply the gain that can be realized by the holder when the option is exercised immediately.⁵ In contrast, an option’s *time value* is the magnitude by which the option’s total value exceeds its intrinsic value. “Time value reflects the possibility that the option will have a fair value greater than zero because there is some expectation that the price of the (underlying) will increase above the strike price during the option terms.”⁶

Forwards

- A *forward contract* is another type of derivative. It shares a family resemblance with an option. But there is a significant difference between an option and a forward contract.
- A forward contract is a contract, whereby the parties to the contract each commit upfront to buy or sell something in the future, such as (but not limited to) a foreign currency or a particular commodity, like gold.⁷
- Essentially, an option is just an option; that is, it is an option to do something – like buy shares at the strike price – on a specific date. But the holder does not need to exercise said option.

⁵ Refer to page 1004 of the textbook.

⁶ Retrieved from page 1004 of the textbook.

⁷ Refer to page 1005 of the textbook.

- In contrast, a warrant entails an obligation to do something. It is a mutually binding contract. The holder no longer has the option of doing something. S/he must do it. To illustrate this point, a forward contract might oblige the holder to purchase USA dollars in Canadian dollars at a specified rate, on a stated date.
- Forwards are accounted for at fair value in much the way as options are. This means that the value of a forward is adjusted in conjunction with changes to the value of the underlying. These changes result in the recognition of gains/losses along with adjustments in the carrying value of the associated forward contract.
- Both the holder and the writer will remove the forward contract and the underlying from their books when the holder takes possession of the underlying. Generally a gain/loss⁸ is recognized on both sides of the transaction equal to the difference between the cash exchanged and the value of the underlying on the maturity date.
- One significant distinction: Speculators buy and sell options with the aim of a generating profits. However, speculators do not take delivery of the underlying. This scenario can be juxtaposed with the case of a forward contract, whereby the holder does take delivery of the underlying. This is one reason why forward contracts are not traded on exchanges.

2. Debt versus Equity—Issuer Perspective

Complex Financial Instruments: Debt and Equity (E16-2, E16-6, E16-10, E16-13)

Complex financial instruments often have more than one component. Particular attention is given, in the chapter, to complex financial instruments comprising debt and equity, such as convertible debt, bonds with detachable warrants, and notes with detachable warrants. It is important to identify and classify each component separately on the SFP to provide information on the company's capital structure to the users. Users draw on this information to evaluate, for instance, a particular company's liquidity, leverage, debt coverage, and so forth. Creditors also use the information to better ensure the company does not broach debt covenants.

Given this context, preparers have an incentive to structure the issuance of a complex financial instrument as equity rather than as debt. ASPE and IFRS expound criteria to delineate debt from equity. The following criteria should be applied to determine whether specific aspects of a financial instrument constitute debt versus equity: (1) Contractual terms, (2) Economic substance; (3) Definitions of financial statement elements. (Please refer to page 1011 of the textbook for further details.)

A *convertible bond* is one type of convertible debt. It is a bond that can be converted into common shares of the company. It combines the benefits of a bond with the privilege of exchanging it for common shares at the holder's option.⁹ Convertible bonds are often issued with conversion rights enabling the holder to convert the bonds into a predetermined number of the company's shares. Convertible bonds are attractive to investors because investors receive guaranteed interest payments plus the added benefit of being able to convert the bonds into common shares whenever the value of the shares appreciates considerably. Conversely, convertible bonds are appealing to the company because it can raise capital without diluting its existing equity. Further convertible debt is less expensive to issue. Convertible debt often carries a relatively low coupon rate, given that investors are willing to accept a lower return in the short-run in exchange for the future benefit of converting the debt into equity.

Reporting Issues: Convertible Debt

1. Issuance - Convertible Debt at Time of Issuance

Convertible debt encompasses two components, and they are debt and equity. The company measures and recognizes the two components separately on the SFP.

IFRS – The value of convertible debt is split between debt and equity, whereby the *residual value method* (or *incremental method*) is used to make the allocation. This method sees only one component of the convertible debt – that is, either the debt or the equity – measured at fair value. The value of the other component is simply a residual figure equal to the difference between the proceeds collected by the company and the value of the component measured. Generally the fair value of the debt is used for this purpose. But if the value of the debt cannot be determined, then the fair value of the equity is used for this purpose.

⁸ Presumably the holder expects to recognize a gain, given it pays a fee to the writer to purchase the forward contract.

⁹ Retrieved from page 1014 of the textbook.

ASPE – There are two options available to preparers for recognizing convertible debt on the balance sheet: (1) Residual Method, and (2) Zero-Equity Method. Application of the zero equity-method sees no amount allocated to equity; that is, the entire value of the proceeds collected is plugged to debt.

2. Conversion - Convertible Debt at Time of Conversion

IFRS and ASPE both require application of the *book value method* to account for the conversion of debt into equity. Application of the book value method sees the value of equity recorded in the journal entry as a plug rather than the fair value of the equity on the date of conversion. No gain or loss is recognized. (Refer to page 1015 of the textbook for details on the conceptual underpinnings of the method.)

Induced Early Conversions

Induced early conversions see the issuer incentivize holders to convert debt into equity. This end can be achieved, for instance, when the issuer pays a cash sweetener to the holder so that the holder converts her/his debt into equity.¹⁰ The accounting for an induced early conversion can be illustrated vis-à-vis a simple example, whereby a company induces early conversion of bonds bundled with stock options. (You can assume investors acquired the bonds along with purchase call options, whereby the investors have the right to buy the company's stock at the strike price within the exercise period.) Pertinent data must be gathered to account for this induced early conversion, including: (1) the value of the cash sweetener (e.g., cash premium, inducement premium); (2) the carrying value of the bonds payable; (3) the fair value of the bonds payable; and (4) the carrying value of the stock options. Once these data are collected, apply these steps to account for the induced early conversion:

- Step #1: Determine the difference between the fair value of the bonds payable and the carrying value of the bonds payable. Assuming the fair value of the bonds payable exceeds the carrying value of the bonds payable, then the resulting difference is debited to an account called "Loss on Redemption of Bonds."
- Step #2: Determine the difference between the value of the cash sweetener and the value of the Loss on Redemption of Bonds. (See Step #1.) The resulting difference is debited to "Retained Earnings."
- Step #3: Complete the rest of the journal entry in this manner: The carrying value of the bonds payable is debited (i.e., remove the bonds from the books); the carrying value of the stock options is debited (i.e., remove the options from the books); cash is debited for the amount of the sweetener; and then, in an application of the book value method, common shares is plugged for the amount needed to balance the journal entry.

The resulting journal entry looks like this:

Bonds Payable	xxx	
Loss on Redemption of Bonds	xxx	
Contributed Surplus – Stock Options	xxx	
Retained Earnings	xxx	
Common Shares		xxx
Cash		xxx

3. Retirement - Retirement of Convertible Debt

The retirement of the debt component of a complex financial instrument is handled in the same manner as the retirement of ordinary bonds/notes. (Refer to Chapter 14.) Early or induced conversions often manifest in gains/losses.

¹⁰ Note: The accounting method used to report the conversion should be consistent with the original accounting method used to report the issuance of the debt (e.g., residual value vs. zero-equity method). An early conversion often gives rise to a loss.