

# Chapter 6

---

# Financial Risk Management

## Chapter Learning Objectives

---

Upon completion of this chapter, you should be able to:

1. Distinguish financial risk management from financial speculation.
2. Appreciate the magnitude of speculative gains and losses on income.
3. Describe the need for financial risk management strategies.
4. Assess financial risk management transactions.
5. Analyze cash flow hedges and their effect on the financial statements.
6. Evaluate fair value hedges and their effect on the financial statements.
7. Distinguish between historical cost and fair value accounting for unhedged assets and liabilities.
8. Access and analyze financial risk information presented in Form 10-K.

Chapter 6 analyzes financial risk and its management. Market fluctuations and uncertainties can alter the value of economic resources and claims to them. Consequently, firms can adopt various financial strategies to protect themselves against unfavorable market shifts, which allows them to focus on core business operations—those central activities that drive sustainable earnings. On the other hand, entities can embrace financial variability in order to reap substantial profits. Such speculative practices, however, carry great risk that could financially jeopardize firm viability. A central theme of this chapter distinguishes between prudent financial risk management and reckless financial speculation.

This chapter begins by contrasting financial risk management with financial risk speculation. It then illustrates how speculative activities can substantively affect income and cash flow. The remainder of Chapter 6 examines the financial reporting requirements and the analytical implications pertaining to financial risk management—the means by which an entity *reduces* its uncertain financial future. This area of financial planning and reporting entails transactional complexities that substantively affect corporate disclosures and require analytical insight and understanding. Financial risk management strategies can affect both current and long-term asset and liability accounts; moreover, they can change wealth or alter cash flow, depending on their structure.

## Financial Risk

Business operations involve risk. Prices change over time and the value of goods and services vary relative to other goods and services. Such volatility can affect corporate results and manifest itself in the financial statements.



### My Analysis 6-1

#### Risk Types

Every firm has a core business. Such activity represents the central, on-going business operations designed to create wealth for shareholders. The rewards accruing to the owners exist because equity investors are willing to undertake the risks associated with conducting core business operations.

Financial risk management represents a vehicle to reducing the owners' exposure to business risk. In essence, there are two types of risk. *Idiosyncratic risk* represents unavoidable

risk encountered in operating a business. For instance, Ford Motor Co. runs the risk that it cannot produce and sell automobiles that appeal to consumers in sufficient quantity to cover its cost of making and distributing its vehicles. Idiosyncratic risk encompasses the potential that Ford cannot compete with its competitors on product cost, design, reliability and so forth.

*General risk* is the other type of business risk. This risk category affects all firms in all sectors of the economy in varying degrees. Ford, for example, encounters general risk factors such as increasing commodity prices and interest rates as well as unfavorable currency movements. The essence of financial risk management is to contract with other parties that are better able to manage general risk. In other words, Ford should not bear increased commodity prices if it can lay the risk of rising prices off on another entity willing to accept that risk. This differs from the idiosyncratic risk borne by Ford. The automaker cannot contract with another entity to bear the burden if it makes lousy cars that consumers are unwilling to buy.

### Discussion

Discuss whether fair value and cash flow hedges reduce idiosyncratic or general risk. Can you explain how successfully reducing idiosyncratic risk could lower the amount of equity capital invested in a business? Comment on why financial speculation does not necessarily reduce either idiosyncratic or general risk.

Consider the Chapter 5 conversion of euro-denominated financial statements into U.S. dollar amounts for our hypothetical Internet retailer, Redlands Inc. The firm's exposure to changes in the value of the dollar relative to that of the euro created financial risk for Redlands. Recall how the firm increased *comprehensive* income and shareholders' equity on the balance sheet when it defined the strengthening euro as its functional currency. Conversely, the Internet retailer recognized a remeasurement loss on its income statement under the assumption that it did business in dollars—a currency that weakened over time against the euro.

The changes in foreign exchange rates altered the net asset position of Redlands Inc. While such currency changes are beyond the control of Redlands, financial avenues exist that would allow Redlands to mitigate its exposure to changes in the relative value of currencies. For example, Redlands could contract with another entity that was willing to assume Redlands' exposure to changes in currencies over time. Of course, the *counterparty* to Redlands would have to be compensated for such a deal. Such mutually beneficial transactions lie at the heart of financial risk management.

### Financial risk management

Actions undertaken by a reporting entity to reduce financial risk

### Financial speculation

Non-operating financial activities designed to yield substantial profits, but subject to great risk

## Management versus Speculation

**Financial risk management** encompasses the collective risk reduction strategies undertaken by a reporting entity. Prudent management requires that firms manage their risk; and financial statement analysts assess the effectiveness of those efforts.

Before delving into the reporting requirements and analytical implications of financial risk management, the financial statement analyst must ascertain that an entity engages in managing financial risk, rather than financially speculating about future events. **Financial speculation** involves risk-taking activities designed to earn income rather than reducing financial risk.

## Industry Insight 6-1

### Derivatives and Core Profits

Sears Holdings Corporation is the parent company for Sears and Kmart stores. Many consider this combined entity as a competitor to Walmart and Target in the discount retail industry. Unlike their more successful retail counterparts, Sears Holdings has struggled to find a profitable niche in this segment of retailing. Financial engineering, however, buoyed the struggling retailer's bottom line, at least for a time.

Sears, Roebuck and Company was a leading retailer in the United States for much of the early 20th century. The firm maintained a thriving catalog business in addition to its retail outlets. Sears offered a comprehensive product mix ranging from clothing and accessories to automotive and hardware products. The firm developed brand names such as Kenmore Appliances and Craftsmen Tools. Sears lost market share during the second half of the previous century as more focused firms (e.g., Walmart and Home Depot) took away market share from Sears.

Descending from the original variety store operations of S.S. Kresge, Kmart pioneered discount retailing. It was the largest discount retailer until Walmart surpassed it during the 1980s. Analysts attribute overexpansion and lack of disciplined operations to Kmart's decline. Kmart sought bankruptcy reorganization in 2002 and emerged as Kmart Holdings in 2003. It purchased Sears Roebuck in 2004 and began combined operations as Sears Holdings Corporation in 2005.

The post-bankruptcy consolidated enterprise was initially profitable and ostensibly successful. Sears Holdings reported \$1.49 billion of net income from \$53 billion in sales in 2006. Two years later, however, that profit all but disappeared amid dwindling revenues. In 2008 and 2009, the firm reported \$53 million and \$235 million in net income, respectively. It recognized revenues of \$47 billion and \$44 billion in those two years.

Financial engineering, rather than successful retailing, fueled much of the early success of the reconstituted Sears/Kmart combination. For example, derivative investments accounted for more than half of the firm's net income for the third fiscal quarter of 2006, according to that quarter's Form 8-K filing. *Total-return swaps* were the primary driver of those

non-operating gains. Such total-return swaps consist of highly leveraged bets on the price movements of other entities without taking an ownership position in them.

The financial analyst must realize that total-return swaps, and other exotic financial engineering strategies, differ from derivative instruments designed to hedge against changes in fair value or cash flow. They do not reduce the inherent risk of business operations. As this case illustrates, speculative investments can *temporarily* mask the inability of a firm to compete with other firms in core business activity, but they are not a long-term substitute for conducting successful core operations. Sears Holdings has yet to demonstrate that it can compete with Walmart and Target in retailing operations.

Financial speculators acquire positions based on anticipated prices in relation to current value, and seek to profit from conjecture about the future. Financial speculation based on correct projections produces earnings, but positions taken based on inaccurate forecasts generate losses. The magnitude of these speculative gains and losses are often substantial. Good bets produce astounding returns on investment, but bad ones can bankrupt the speculator. Consequently, those firms whose core business is something other than financial speculation (such as those covered in this textbook) should not financially speculate. This financial risk is too great.

## Financial Speculation Illustrated

Gains and losses from financial speculation stem from changes in the fair value of assets—or claims to them—over time. To illustrate changes in equity from financial speculation, we assume that Redlands Inc. purchased an option to buy 25,000 shares of Claremont, Inc. stock on December 1, 2013. Redlands paid an equity broker \$6,000 for the right to purchase Claremont stock for \$5 a share within three months of the transaction date.

Specifically, Redlands' speculative **call option** enabled the firm to purchase (or call for) 25,000 shares of Claremont's stock by February 28, 2014. The option call price of \$5 per share equaled the market price of Claremont's stock on December 1, 2013, the date Redlands acquired the option. The \$6,000 paid to the equity broker is initially an asset for Redlands, but its value will diminish over the lifetime of the option at the rate of \$2,000 per month.<sup>1</sup>

Suppose that Claremont's stock had a market price of \$8 per share throughout December 2013, but Redlands did not call for the stock. The firm exercised its call option on the last day it was in effect—February 28, 2014—when Claremont stock traded at \$7 per share. Exhibit 6-1 presents the financial statement effects for Redlands' assumed speculative call option.

### Call option

An option that allows its holder to purchase a security at a predetermined price

## EXHIBIT 6-1 REDLANDS' BALANCE SHEETS

Stock Call Option (\$ in thousands)				
Transaction	Cash	Call Option	Investment in Claremont	S/Equity
Purchase option on 12/1/13	\$ (6)	\$ 6		
Recognize gain (loss)—12/31/13		75		75
Decrease call option value for 2013		(2)		(2)
<b>Balance—12/31/13</b>	<b>(6)</b>	<b>79</b>	<b>—</b>	<b>73</b>
Recognize gain (loss)—2/28/14		(25)		(25)
Decrease call option value for 2014		(4)		(4)
Acquire Claremont stock—2/28/14	(125)	(50)	175	
<b>Balance—2/28/14</b>	<b>\$ (131)</b>	<b>\$ 0</b>	<b>\$ 175</b>	<b>\$ 44</b>

Note the following from Exhibit 6-1.

- Redlands earned \$73,000 of income in 2013 by speculating in Redlands stock. It purchased an option to buy 25,000 shares at \$5 per share for \$6,000. The \$3 increase in the market value of Redlands stock in that year (from \$5 to \$8) produced a gain of \$75,000, which was adjusted for the diminished time value of the call option ( $\$75,000 - \$2,000 = \$73,000$ ).<sup>2</sup>
- Redlands would report the \$73,000 gain as non-operating revenue on its 2013 income statement.
- The decrease in share price of Redlands' stock in the first two months of 2014 (from \$8 to \$7) produced a \$25,000 speculative loss for Redlands in 2014. When coupled with the \$4,000 amortization of the time value of the option, the 2014 loss equaled \$29,000.
- Redlands would report the \$29,000 loss as non-operating revenue on its 2014 income statement.
- Overall, Redlands increased income and shareholders' equity by \$44,000. It contracted to purchase stock for \$5 per share, and it acquired the stock when it was worth \$7 per share. This \$50,000 profit (25,000 shares \* \$2) was partially offset by the expiration of the time value of the option ( $\$50,000 - 6,000 = \$44,000$ ).

Financial speculation is an end unto itself; it is not a method to mitigate financial risk. Recall that Redlands earned net income of \$21,000 in 2013 from selling sporting goods (Exhibit 2-5). The \$73,000 gain the firm earned from financial speculation in that year would have more than tripled core business earnings. The financial statement analyst must bear in mind, however, that Redlands is an Internet merchant, not a financial speculator. Therefore, one would place entirely different values on the two distinctly different earnings streams because income derived from financial speculation is not a core business activity. It represents

unsustainable income levels that can vary greatly from one reporting period to the next (e.g., witness the \$29,000 speculative loss in 2014).

Exhibit 6-1 illustrated a call option that finished **in the money** because the call price was less than market value of the stock when exercised. In the event that the market price of Redlands' stock decreased during the option period to something less than \$5 per share, then Redlands would not exercise its option to purchase the stock. In this circumstance, the option would be **out of the money**. Redlands, however, would still have had to recognize the \$6,000 cost of the option as an expense (\$2,000 in 2013 and \$4,000 in 2014).

Finally, it is common for a financial speculator not to take possession of the stock even if it finishes in the money. The speculator merely settles with the counterparty for the cash value of option. Exhibit 6-2 demonstrates the financial statement effects of cash settlement using the Redlands data in Exhibit 6-1.

### In the money

An option price that is less than the market price of the security

### Out of the money

An option price that exceeds the market price of the security

## EXHIBIT 6-2 REDLANDS' BALANCE SHEETS

Settlement of Stock Call Option (\$ in thousands)				
Transaction	Cash	Call Option	Investment in Claremont	S/Equity
Balance—12/31/13	\$ (6)	\$ 79		\$ 73
Recognize gain (loss)—2/28/14		(25)		(25)
Decrease call option value for 2014		(4)		(4)
Acquire Claremont stock—2/28/14	50	(50)		
<b>Balance—2/28/14</b>	<b>\$ 44</b>	<b>\$ 0</b>	<b>\$ 0</b>	<b>\$ 44</b>

Note from Exhibit 6-2 that the successful financial speculation increased the net assets (shareholders' equity) of Redlands by \$44,000. This result equaled the net asset increase of \$44,000 presented in Exhibit 6-1 (stock acquisition). The difference is that Redlands realized the net asset increase in the form of cash in Exhibit 6-2 instead of as a discounted option price for the Claremont stock acquired in Exhibit 6-1.

## Financial Risk Management

Financial risk management, as opposed to financial speculation, endeavors to safeguard resources and earnings generated from core business activities by protecting the central wealth-building activities from unnecessary exposure to financial risk. With this distinction in mind, we will examine financial risk management strategies more closely.

**Hedging strategies**

Actions undertaken to mitigate financial risk

**Derivative**

An financial instrument that derives its value from another instrument, product, or asset

**Underlying**

A market-related variable that serves as the basis for a derivative

**Lock-in**

A contractually secured purchase or sale price

**Derivative Instruments**

**Hedging strategies** reduce exposure to economic factors that could affect earnings and resources. Companies implement hedging strategies in order to meet one of two specific objectives. Firms use one type of hedging strategy to reduce exposure to variable—and sometimes volatile—cash flows inherent in certain transactions and commitments. An alternative hedging strategy results from an entity's desire to offset its exposure to fluctuations in the market value of financial instruments, such as security investments and bonds payable.

**Derivatives** lie at the heart of managing financial risk and most hedging arrangements. Such financial instruments represent an agreement between independent entities to do something in the future that mutually benefits both transacting parties. For example, Redlands could agree with a supplier on the future purchase price of inventory, which would provide satisfactory rates of return to both the Internet retailer and its vendor.

As one could infer from this arrangement, the value of a derivative stems from the worth of another economic item—in this case the price of inventory. Financial statement analysts refer to the item that firms' hedge against, and from which derivatives arise, as an underlying. Price changes in the **underlying** (e.g., inventory) determine the value of the hedge against it.

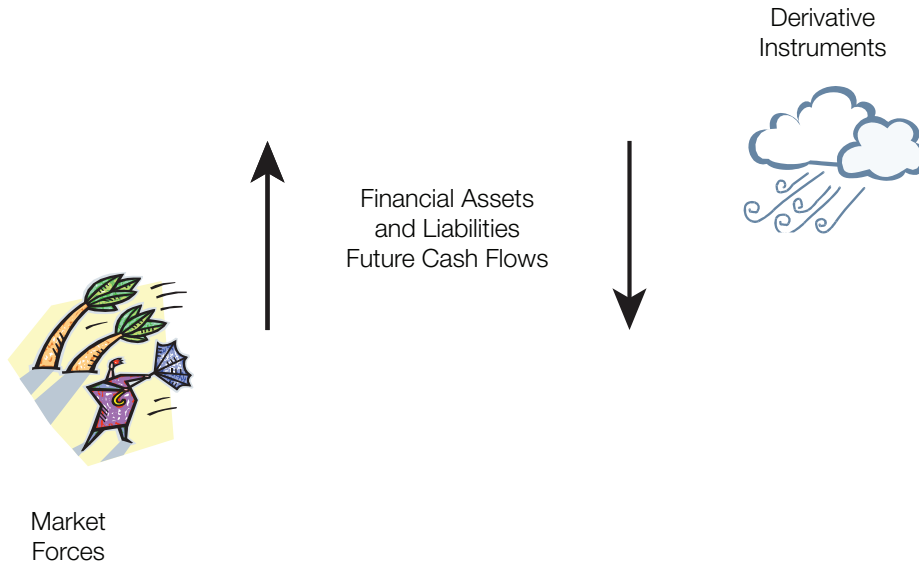
The price of inventory in the above example could increase, decrease, or remain constant over time. An increase in the cost of inventory results in Redlands paying a lower cost for the agreed upon hedged inventory than it would have for inventory without a hedge attached to it. Conversely, the firm would pay more for hedged inventory than unhedged merchandise if the cost of inventory decreased over time. The hedge allows Redlands to secure (or **lock-in**) inventory cost at specified monetary amounts.

The financial statement analyst must understand that financial risk management does *not* maximize profits or losses as financial speculation does. Financial risk management strategies merely safeguard business operations by reducing financial risk or the exposure to unfavorable future price movements. Exhibit 6-3 depicts the intent of derivatives as a financial risk management strategy.

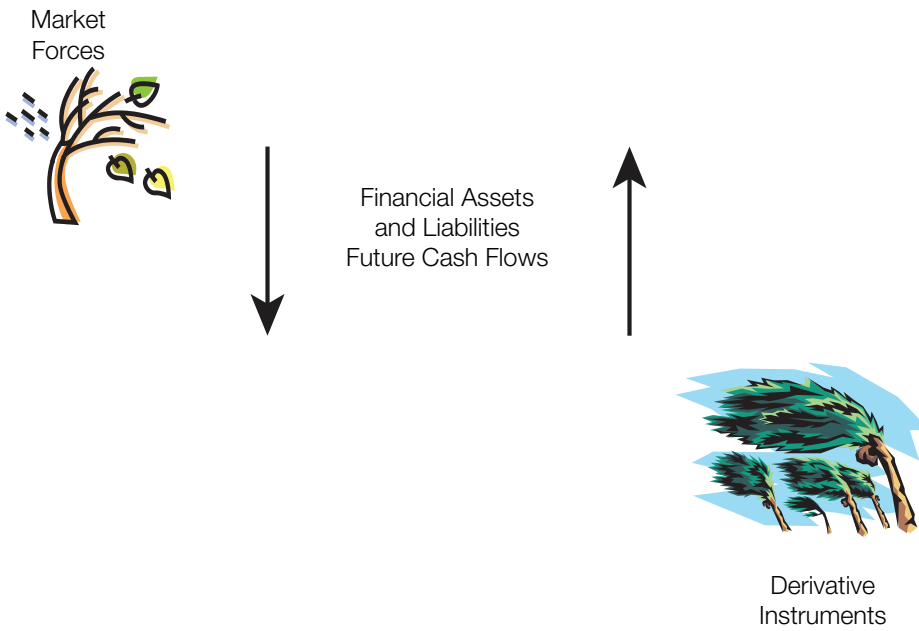
---

EXHIBIT 6-3 RISK MANAGEMENT

**Case 1**



**Case 2**



## Hedge Arrangements

Three prominent derivative instruments are:

1. Forward contracts
2. Options
3. Interest rate swaps

### Forward contract

The right to buy or sell an asset at a predetermined price

The Redlands derivative described above is an example of a **forward contract**. In this type of arrangement, a buyer and seller lock in a price for the transfer of goods or services in the future.<sup>3</sup> Recall that by locking in the purchase price, Redlands eliminated the risk of unfavorable inventory cost fluctuations. The Internet retailer also gave up the opportunity to benefit from future favorable (declining) price movements for merchandise. In other words, the forward contract allows Redlands to manage its business better because it eliminates the risk of incurring higher inventory costs in the future. By doing so, the derivative agreement allows the company to

- accurately plan purchase prices.
- establish acceptable retail markups on those costs.
- generate an acceptable rate of return on its investment in the merchandise.



## My Analysis 6-2

### The Killer Put

All financial management strategies are essentially either forward contracts or options, irrespective of how complex a particular arrangement happens to be. *Forward contracts* represent required future actions on the part of contracting parties. *Options*, on the other hand, grant an entity the right to either buy or sell a resource depending on the costs and benefits of doing so.

In general, a *put option* conveys to its holder the right, but not the requirement, to sell a specific asset at a predetermined price by a predetermined date. A firm pays a contracted price to acquire a put option, and it exercises that option if the selling price of the asset exceeds its cost. Regardless of whether or not the entity *puts* the asset onto its counterparty, it must bear the cost of acquiring the put option.

Not all put options work in the conventional manner. General Motors controlled a 10% stake in Fiat SpA of Italy resulting from an alliance between the two car manufacturers. As part of the original GM investment, Fiat insisted on the right to make GM purchase the remaining 90% of shares if Fiat so chose. The Italian automaker, in essence, controlled a put option on its own firm.<sup>1</sup>

Both GM and Fiat encountered financial difficulty subsequent to the alliance as Asian automakers took market share away from the American and European firms. By the end

of 2004, Fiat insisted that GM purchase all of the outstanding shares of Fiat that it did not already control. Ironically, General Motors had written off its 10% ownership interest in Fiat, originally valued at \$4 billion, as worthless by that time. It had no desire to acquire the remainder of the debt-laden Italian automaker. Fiat, however, had the put option and pressed for acquisition. In a negotiated settlement, GM paid \$2 billion to Fiat in 2005 to forego exercising its put option.

### Discussion

In general, discuss how a put option can affect cash flows of the parties involved. How do you think an analyst would gather information about the probability of exercise by a put option holder.

State the primary reason that General Motors did not want to acquire Fiat. Assess GM's decision to pay Fiat not to exercise its option. Analyze the overall financial results realized by GM due to its strategic alliance with Fiat.

---

<sup>1</sup>Material based on "GM Agrees to Pay Fiat \$1.99 Billion to Settle Dispute," by G. Kahn and L. Hawkins, Jr., *Wall Street Journal*, February 14, 2005, A4.

Alternatively, Redlands could have purchased an **option** as a hedge against changing inventory prices. This type of derivative allows, but does not require, the Internet retailer to buy inventory in the future at an agreed upon price. Redlands would exercise its purchase option if the option price were less than the current cost of the inventory on the date that the firm takes possession. On the other hand, the company would not exercise its option if the derivative instrument's price exceeded the market price for the merchandise on the acquisition date. You can think of the purchase option as an insurance policy that establishes the upper limit that Redlands will pay for its inventory.

Options, unlike forward contracts, have an explicit cost. (Recall the discussion of financial speculation when the Claremont stock call option finished out of the money earlier in this chapter.) Furthermore, the cash paid for an option is a sunk cost. It is a cost of managing risk, regardless of whether or not the company exercises its option. Although different from a forward contract in cost behavior and transaction structure, Redlands could contract for a purchase option in order to reduce its financial risk. The option derives its worth from the inventory and the value of the option varies inversely with the market price of the merchandise. In other words, the option has value if it allows the entity to purchase inventory at a lower amount than the current market price. Conversely, inventory with a market price lower than the exercise price of the option renders it worthless.

**Interest rate swaps** are the third prominent type of derivative instrument. Such swaps consist of two parties who, in effect, make interest payments on behalf of each other. To understand how an interest rate swap enables a company to manage financial risk, recall

### Option

The opportunity, but not the obligation, to buy or sell an asset

### Interest rate swap

A transaction whereby two parties agree to assume each others payment or receipt of interest

from Chapter 2 that Redlands borrowed \$100,000 at a 10% fixed interest rate at the beginning of 2013.<sup>4</sup> Assume for the moment that the company wanted to borrow money at a variable interest rate because management believed that interest rates would decline over time. The company's interest expense would decrease if its assumption was correct and they borrowed on a variable basis. Borrowing costs would increase, however, if interest rates increased in the future.

Assume for the moment that Redlands' lender refused to make a variable rate loan to the fledgling entity, causing Redlands to agree to the fixed interest rate 10% note. Management could effectively meet its variable-interest rate objective by locating a company that held a variable-rate loan and anticipated interest rate increases. The two firms could agree to swap interest payments.<sup>5</sup> Redlands would pay the variable interest rate on behalf of the other entity. The *counterparty* to the interest rate swap, in turn, would pay Redlands' fixed contractual cost of borrowing.<sup>6</sup>

## Financial Reporting Requirements

GAAP did not require companies to disclose the economic consequences of derivative instruments until 1999. Standard setters previously reasoned that a promise to do something in the future did not constitute a reportable event. In other words, the transacting parties did not exchange tangible consideration when entering into a derivative agreement. Thus, derivatives were often *off-balance sheet*, or unreported in the financial statements under previous GAAP. A robust market for derivatives, however, attests to their economic value. Therefore, FASB changed GAAP and now requires companies to report derivative assets and liabilities at fair value on their balance sheets.<sup>7</sup>

Classification of derivatives as either cash flow or a fair value hedges affects financial reporting requirements for both derivatives and their related hedged items. **Cash flow hedges** are one type of hedge used to manage financial risk. As its name implies, companies use cash flow hedges to eliminate variations in their cash commitments. On the other hand, a company reports a **fair value hedge** when it attempts to offset changes in the market value of a hedged asset or liability by securing a derivative that essentially insures maintaining the historical cost of the underlying asset or liability on the balance sheet. We will now examine each type of hedge in more detail.

### Cash flow hedge

A transaction designed to reduce or eliminate the exposure to cash flow risk

### Fair value hedge

A transaction designed to reduce or eliminate the exposure to a change in the recognized value of an asset or liability

## Cash Flow Hedges

An extension of Redlands' forward inventory contract illustrates cash flow hedge reporting. Assume for the moment that the firm planned to acquire highly specialized inventory that it will sell to a specific customer. We first present the balance sheet effects for the conventional inventory transactions (i.e., no hedging) related to this specialized

inventory. We will then examine the results when the e-tailer hedges its inventory acquisition with a forward contract. The following two exhibits present the alternative balance sheet effects for Redlands under the following assumptions:

- Toward the end of 2013, the firm knew it would have to purchase specialized inventory at the beginning of 2014.
- That inventory cost \$5,000 toward the end of 2013.
- The cost of the specialized inventory increased to \$5,400 at December 31, 2013 and
- Redlands purchased the inventory for \$5,400 at the beginning of 2014.
- The firm sold the entire specialized inventory purchased during 2014 to its customer for \$8,000.

#### EXHIBIT 6-4A BALANCE SHEET EFFECTS

Without Forward Contract—No Cash Flow Hedge			
Transaction	Cash	Inventory	S/Equity
Considered purchasing inventory in 2013	N/A*	N/A	N/A
Acquired and pay for inventory in 2014	\$ (5,400)	\$ 5,400	
Sold inventory in 2014	8,000		\$ 8,000
Matched the inventory cost to the sale		(5,400)	(5,400)
Totals	\$ 2,600	N/A	\$ 2,600

\*N/A = not applicable

Extreme Edge could have increased shareholders' equity by an additional \$400 if it had purchased the inventory toward the end of 2013 when it cost only \$5,000 (\$8,000 selling price – \$5,000 cost of inventory). The future cost of the specialized inventory, however, was unknown at that time. Conceivably, 2014 inventory cost could have increased, decreased, or remained constant in relation to its 2013 amount.

## Industry Insight 6-2

### Hedging Fuel Prices

Jet fuel prices are a substantial cost of doing business for air carriers. For most airlines, it constitutes the second largest operating expense after wages and salaries for labor. The

(Continues)

rapid increase in the price of jet fuel from 2003 through 2007 placed further pressure on operating profits.

Some firms protected their earnings by hedging against the increase in fuel prices. They entered into cash flow hedges that derived value from the price of jet fuel. Other airlines could not employ this financial management strategy. Successful financial management of jet fuel prices required that an air carrier to have a relatively strong financial position to begin with. The contrast between the cash flow hedges of Southwest Airlines and full service carriers, such as American Airlines and Delta Air Lines, offer a case in point.

The ability to contract for jet fuel on a forward basis in order to lock in prices depends on the contractual capability of the airline and its counterparty, a fuel broker or distributor. Because of its history of profitable operations and strong cash flow, Southwest Airlines successfully secured lower than market prices for fuel as costs rapidly escalated. Fuel distributors considered the airline a good risk to be able to take possession and to pay for jet fuel when the contracts came due. Conversely, American and Delta had difficulty contracting with counterparties for future petroleum acquisitions. Jet fuel brokers perceived too great a risk from entering into forward contracts with financially troubled airlines. These distributors, in effect, doubted the full service air carriers' ability to pay for the jet fuel. American, Delta and other legacy carriers had checkered histories of profitability and operating cash flow. Recent bankruptcy declaration by Delta and United questioned their ability to continue as going concerns, let alone make good on their derivative contracts.

Locking in low cost jet fuel as prices rose, further strengthened the financial position of Southwest Airlines. The inability to do so, however, exacerbated the precarious financial positions of American and Delta. In effect, the strong got stronger and the weak got weaker from their ability, or inability, to hedge jet fuel prices. The lesson for financial analysts is that entities can only financially manage operations if willing counterparties exist. Firms will only engage in hedge contracts when they feel confident that the other party can fulfill its part of the agreement.

Now let us assume that Redlands hedged against inventory price fluctuations by entering into a forward contract with its supplier toward the end of 2013. This forward contract hedge established a \$5,000 purchase price for Redlands, although the Internet retailer would not take possession of the inventory until the beginning of 2014. Exhibit 6-4B presents the balance sheet ramifications of the transactions under this assumption.

## EXHIBIT 6-4B BALANCE SHEET EFFECTS

With Forward Contract—Cash Flow Hedge				
Transaction	Cash	Inventory	Inventory Hedge	S/Equity
Entered into forward contract when inventory cost \$5,000	N/A*	N/A	N/A	N/A
Establish the <i>hedge</i> as an asset and increased other comprehensive income at December 31, 2013 (inventory fair value = \$5,400)			\$ 400	\$ 400
Acquired and paid for inventory at a current cost of \$5,400 in 2014	\$ (5,000)	5,400	(400)	
Sold inventory in 2014	8,000			8,000
Matched the inventory cost to the sale and decrease other comprehensive income		(5,400)		(5,000)
				(400)
<b>Totals</b>	<b>\$ 3,000</b>	<b>\$ 0</b>	<b>\$ 0</b>	<b>\$ 3,000</b>

\*N/A = not applicable

Consider the following items contained in the above exhibit:

- Entering into the forward contract had no effect on the financial statements; however, hedging inventory prices created an asset because the cost of inventory increased from \$5,000 toward the end of 2013 to \$5,400 at the end of that year. The firm, however, locked in the lower purchase price by hedging the inventory purchase.
- The company offset the hedged asset by increasing *other comprehensive income (OCI)* in shareholders' equity. Redlands would report the \$400 equity increase in its 2013 statement of *comprehensive income*.
- The accounting system reported inventory at the current cost (\$5,400) when acquired, but the cash paid for it equaled the contracted price (\$5,000). The elimination of the hedged asset reconciled the difference between the two amounts.
- The firm removed the inventory from its balance sheet at the acquired cost of \$5,400 when it sold the merchandise in 2014. Its income statement matched the cost of inventory sold against revenues at its hedged (contracted) price of \$5,000. The elimination of the \$400 other comprehensive income account in shareholders' equity at the time of sale reconciled these two amounts. Redlands would report the \$400 equity decrease in its 2014 statement of *comprehensive income*.

## Fair Value Changes

Firms can also enter into derivative contracts to protect the economic value of a financial asset or liability rather than locking in an amount of cash. To understand how fair value hedges work, we will first examine the financial statement implications when a firm does not hedge its financial instruments.

Recall from Chapter 2 (and the previous discussion in this chapter) that Redlands was obligated to pay a 10% fixed rate of interest on a note secured at the beginning of 2013. Assume for the moment that the term note had a 10-year life. Suppose that the market interest rate declined to 9% in 2013 after Redlands borrowed the \$100,000. The firm would report \$10,000 annual interest expense on its income statement, and it would report the book value of the note on its balance sheet at \$100,000.<sup>8</sup> Exhibit 6-5A presents the GAAP-based statement of financial position resulting from Redlands' fixed rate borrowing.

### EXHIBIT 6-5A BALANCE SHEET EFFECTS

December 31, 2013, Unhedged Financial Liability			
Transaction	Assets	Liabilities	S/Equity
Issue note	\$ 100,000	\$ 100,000	
Incur and pay 10% fixed interest rate	(10,000)		\$ (10,000)
<b>Totals</b>	<b>\$ 90,000</b>	<b>\$ 100,000</b>	<b>\$ (10,000)</b>

Redlands would suffer *economically* from the poor timing of its borrowing because its fixed interest rate payment of \$10,000 ( $\$100,000 \times .10$ ) would exceed the \$9,000 current cost of debt financing ( $\$100,000 \times .09$ ) by \$1,000 in 2013. Viewed another way, the *decrease* in the interest rate *increased* the current market value (fair value) of the note payable.<sup>9</sup>

We can compute the fair value of Redlands' liability with a contracted interest rate of 10% (or \$10,000 cash payment) and an effective interest rate of 9% at December 31, 2013 as follows:<sup>10</sup>

Time Value Component	Amounts	Time Value Factors (n=9, i=9%)	Present Value
Present value of 1	\$ 100,000	.46043	\$ 46,043
Present value of an ordinary annuity	10,000	5.99525	+59,953
Present value of note payable			\$ 105,996

Adjusting for economic reality (i.e., the fair value of the note payable at December 31, 2013) yields the *pro-forma* (non-GAAP) balance sheet disclosure in Exhibit 6-5B:

## EXHIBIT 6-5B PRO-FORMA BALANCE SHEET EFFECTS

December 31, 2013, Unhedged Financial Liability			
Transaction	Assets	Liabilities	S/Equity
Issue note	\$ 100,000	\$ 100,000	
Incur and pay 10% fixed interest rate	(10,000)		\$ (10,000)
Mark note payable to market value		5,996	(5,996)
<b>Totals</b>	<b>\$ 90,000</b>	<b>\$ 105,996</b>	<b>\$ (15,996)</b>

Note that when considering the reality of an increase in a financial liability when interest rates declined from 10% to 9%, Redlands suffered an *economic loss* of \$5,996. This result occurred because the increased fair value of the obligation to its creditors (i.e., a note payable increased from \$100,000 to \$105,996) decreases the owners' claims to firm assets (shareholders' equity) by an equivalent amount. On a non-GAAP basis, the decrease in shareholders' equity would result from a \$5,996 unrealized holding loss that reduced income. To compensate for the difference between book value and fair value of the note payable, GAAP does require Redlands to report the \$105,996 fair value of the note payable in a financial statement footnote.<sup>11</sup>

### Fair Value Hedges

Based on the note payable data from the preceding section, we illustrate a fair value hedge by assuming that Redlands swapped its fixed interest obligation for a variable interest rate liability held by the counterparty. The interest rate swap means that Redlands would pay the prevailing 9% market rate of interest on its note, while the counterparty would assume the higher, fixed interest rate of 10%. Despite contractually carrying a note payable with a fixed interest rate, Redlands' *economic obligation* effectively varies with the market rate of interest, due to its interest rate swap that served as a fair value hedge.

Recall from Exhibit 6-5B that the fair value of the 10% contractual obligation increased by \$5,996 when the market rate of interest decreased to 9%. Redlands' fair value swap creates an economic resource (i.e., an asset) that offsets the increase in the fair value of the liability. Exhibit 6-6A summarizes the balance sheet implications when the firm hedges the fixed-interest rate financial liability.<sup>12</sup>

## EXHIBIT 6-6A BALANCE SHEET EFFECTS—DECEMBER 31, 2013

Fair Value Hedge of a Financial Liability—Decreased Interest Rate			
Transaction	Assets	Liabilities	S/Equity
Issue note	\$ 100,000	\$ 100,000	
Swap fixed interest rate for variable interest rate	N/A*	N/A	N/A
Incur and pay the 9% variable interest rate	(9,000)		\$ (9,000)
Mark note payable to market value		5,996**	(5,996)
Establish interest rate hedged asset equal to the increase in the fair value of the note payable	5,996		5,996
<b>Totals</b>	<b>\$ 96,996</b>	<b>\$ 105,996</b>	<b>\$ (9,000)</b>

\*N/A = not applicable

\*\*As computed after Exhibit 6-5A

Note the following points about the information contained in Exhibit 6-6A:

- The derived instrument (the hedge or interest rate swap) creates a \$5,996 asset, which offsets the \$5,996 increase in the hedged liability.
- The balance sheet reports the hedged note payable at *fair value* and not its historical cost. (Note that this disclosure is consistent with the name of the hedge—a fair value hedge).
- The income statement reports no *net* effect from the interest rate swap. Redlands recognizes \$5,996 *unrealized* loss to complement the increased value of the note payable. (Exhibit 6-6A reflects this as a \$5,996 decrease to shareholders' equity.) The firm offsets the unrealized loss with an unrealized gain when it establishes the \$5,996 hedged asset. (Note the \$5,996 increase in shareholders' equity in the last row of Exhibit 6-6A.)

It is equally possible for the interest rate to increase as well as to decrease. An entity that swapped its fixed rate debt for a variable interest rate also protects the fair value of debt and does not realize any effect on net income. Exhibit 6-6B presents the balance sheet results if we couple the Redlands loan with an assumed 11% interest rate for 2013.

## EXHIBIT 6-6B BALANCE SHEET EFFECTS—DECEMBER 31, 2013

Fair Value Hedge of a Financial Liability—Increased Interest Rate			
Transaction	Assets	Liabilities	S/Equity
Issue note	\$ 100,000	\$ 100,000	
Swap fixed interest rate for variable interest rate	N/A*	N/A	N/A
Incur and pay the 11% variable interest rate	(11,000)		\$ (11,000)
Mark note payable to market value**		(5,537)	5,537
Establish interest rate hedged liability equal to the decrease in the fair value of the note payable		5,537	(5,537)
<b>Totals</b>	<b>\$ 89,000</b>	<b>\$ 100,000</b>	<b>\$ (11,000)</b>

\*N/A = not applicable

\*\*Market value of \$100,000 note payable ( $n = 9$ ,  $i = 11\%$ ) = \$94,463

In Exhibit 6-6B, the fair value of the note payable fell below \$100,000 to \$94,463, due to the increase in the market rate of interest. Consequently, the hedge for the interest rate swap would be a liability rather than an asset. That liability would equal the difference between the (higher) historical cost of the note and its (lower) fair value. Obviously, an increase in interest rates reduces Redlands' cash flow. Note that the firm would have paid \$11,000 for interest in Exhibit 6-6B as opposed to the \$9,000 it would have paid if the market rate of interest decreased to 9% (Exhibit 6-6A).

An entity could also hedge financial assets, such as equity or debt security investments, instead of financial liabilities. A fair value hedge against price movements in security investments is either an asset or liability, depending upon interest rate movements. Finally, an entity holding a variable rate financial instrument (either an asset or liability) could swap it for a fixed rate security.

## Analytical Implications

Consider the implications of a *fair value* hedge. By entering into such agreements, management intends to eliminate fluctuations in the economic value of its financial instruments. Swapping a fixed interest rate obligation for a variable one, or vice versa, creates an asset or liability that offsets the change in the fair value of the underlying financial liability or asset. The fair value hedge produces an income statement gain or loss that counteracts the underlying gain or loss. Consequently, there is *no net effect* on income when a company designates a derivative as a fair value hedge.

Financial statement analysts must be aware that fair value hedges alter cash commitments related to the underlying financial instruments. Depending upon the type of interest rate swap, fair value hedges

can create or eliminate variable cash flows in the future. Future cash payments for interest costs will change over time if an entity swaps its fixed-rate note or bond payable for a variable interest rate obligation. (Refer to Exhibits 6-6A and 6-6B). Similarly, the firm will realize uneven future cash receipts when it trades a fixed interest rate financial asset for one with a variable interest rate. Conversely, a firm stabilizes future cash payments (or receipts) when it exchanges a variable interest rate liability (or asset) for one with a fixed interest rate.

The implications of a cash flow hedge differ from that of a fair value hedge. Companies enter into forward contracts in order to stabilize cash flow. In other words, management desires to eliminate the variability of future cash payments or receipts by locking them in via a contract with the counterparty.

Cash flow hedges affect accrual-based disclosures. Recall from Exhibit 6-4B that Redlands reported acquired inventory at current (fair value) cost on its balance sheet, and not the lower contracted price. It reflected the difference between current inventory cost and contracted cost as part of other comprehensive income (OCI) in shareholders' equity. Moreover, the firm did not realize the advantage of its cash flow hedge until it sold the products in 2014 and lowered its cost of goods sold by \$400 through the elimination of the OCI account. Thus, a cash flow hedge on inventory does not result in an income statement gain or loss, but it does affect income indirectly by altering cost of goods sold.

A financial statement analyst should be aware that the timing of the acquisition and disposition of hedged inventory affects financial statement disclosures. For example, Redlands may sell a portion of its hedged inventory in 2014 and the remainder in subsequent years. This would affect gross profit for hedged inventory over multiple reporting periods. If the firm were to enter into new forward contracts in subsequent years; however, it could mitigate this timing difference or increase it depending on directional movement of the underlying inventory cost.

Financial risk management should mean that an entity uses constructive tactics to insure acceptable levels of business certainty, rather than constantly gambling that they can always maximize revenues or minimize costs. In other words, derivatives used as hedging instruments exist to reduce operational volatility.

Hedges can sometimes reduce return on investment. For example, if interest rates rose (Exhibit 6-6B) or inventory prices fell (rather than increasing as discussed in Exhibit 6-2), Redlands would have realized greater profits if it had not entered into the derivative contracts. The financial analyst should consider whether the benefits of reducing uncertainty outweighed the cost of foregone profitability.

As noted earlier in this chapter, the financial analyst should insure that the firm does not engage in derivatives as a means of financial speculation. Such speculation, while it can lead to large returns on investment, carries substantial risks. Speculative action is not a core business activity for most firms. As such, speculative gains do not create sustainable income. Moreover, potential losses from financial

speculation can more than offset income derived from core business operations.

### Industry Insight **6-3**

#### Betting on Rising Stock Prices

Many firms actively repurchase previously issued shares of stock. Treasury stock transactions represent one means of increasing share price as the company distributes its earnings over fewer shares of outstanding stock. Acquisition of treasury shares represents an alternative use of cash to investing in assets, acquiring competitors, or paying dividends. Firms often acquire treasury shares in advance of issuing stock options to key employees. This tactic insures that no dilution of earnings will take place when executives exercise their stock options.

Firms in growth industries, such as the high-tech sector of the economy, often acquire their own shares as they deem it the best use of excess cash. Entities sometimes engage in hedging strategies to minimize the repurchase price. Those hedges sometimes backfire. Dell and Electronic Data Systems (EDS) experienced such a backlash in the early years of this century.

Both Dell and EDS entered into forward contracts to repurchase shares of their own firms' stock at predetermined prices in excess of current market price. Dell and EDS bet that their share prices would continue to increase over time; therefore, when the time came to repurchase their stock, the companies would be able to buy treasury shares at less than market value. Tech stocks, however, suffered severe declines in market value beginning in 2000. This was an unfortunate turn of events for Dell and EDS because it required the firms to pay more than market value when it came time to repurchase their own shares. Dell recognized a \$500 million loss on its stock price hedge in 2002, and EDS reported a \$100 million loss in that year, according to public filings with the SEC.

Analysts should realize that Dell and EDS speculated on their stock price and lost the bet. This financial management strategy differs from fair value and cash flow hedges, which firms engage in to protect asset (or liability) positions or cash receipts (or disbursements). Speculative hedges can, and do, have financial consequences for an entity. Analysts must weigh their potential benefits and costs.

Financial statement analysts should carefully assess how a firm currently manages risk, its past results in this endeavor, and future prospects for doing so. Most firms extensively address this topic in management's discussion and analysis; and they provide extensive notational disclosures to their financial statements about financial risk management. This discussion of financial risk management merely introduces you to how companies manage risk. Complexities in this area

abound, and financial economists are constantly developing new risk management instruments. At the very least, the analyst must evaluate management disclosures for the following items:

- extent to which the entity engages in hedging activities
- trend in hedging activities over time
- amount of hedging relative to that of the firm's competitors
- reasons why management enters into such transactions—to eliminate fluctuations in the value of financial instruments or to stabilize cash flows (and not for speculation)
- clarity with which the firm discloses risk management activities



### My Analysis **6-3**

## Car Maker or Financial Speculator?

In the early portion of the 21st century, the dollar declined in value relative to the euro. The strong euro made European products more expensive for U.S. consumers purchasing products in dollars, thereby reducing American demand.

Although most European exporters suffered decreased net income due to the weak dollar, German automaker, Porsche AG, was not one of them. It was not the continued high American demand for German sports cars, however, that drove profits. It was Porsche's ability to speculate correctly in foreign exchange markets.

The American market composes almost one-half of Porsche's market. Porsche anticipated decreased sales in the U.S. because the automaker expected the dollar to decline against the euro, thereby pushing the price of its already expensive sports cars even higher. In response, the automaker purchased put options from banks. These options allowed Porsche to exchange dollars for euros at a relatively high dollar to euro exchange rate.

The dollar did fall in value from 2001–2004 against the euro. Porsche, therefore, exercised its foreign currency options and realized significant gains from its position. For example, analysts estimated that 40% to 50% of Porsche's 2004 net income was attributable to its currency bets.<sup>ii</sup>

### Discussion

Do you think that Porsche's 2004 profits would be sustainable if the dollar remained weak in the future?

Assume for the moment that the dollar had strengthened against the euro from 2001—2004 to the same degree that it actually declined during that period. Would such an increase in the value of the dollar have eliminated virtually all of Porsche's net income? (Recall that almost one-half of Porsche's 2004 net income came from currency hedges.)

<sup>ii</sup>Porsche Powers Profit with Currency Plays, by S. Power, Wall Street Journal, December 8, 2004, C4.

## Fair Value Option

As we have addressed in our discussion of fair value hedges, GAAP requires firms to report *hedged* financial assets or liabilities (the underlying item) at their fair (market) values. The corresponding fair values of the hedges themselves offset the adjustments to fair value of the hedged financial securities. This fair value disclosure contrasts to the conventional accounting for unhedged financial securities. As illustrated in Exhibit 6-5A above GAAP traditionally required firms to report unhedged assets and liabilities at their adjusted historical cost.

Financial reporting standards, however, have extended fair value reporting beyond fair value hedges.<sup>13</sup> The FASB has increasingly favored reporting accounts at their fair value instead of historical cost whenever reporting entities can measure fair value accurately. Notable is the recent adoption of the **fair value option** for reporting financial assets and liabilities.<sup>14</sup> The fair value option allows a firm to measure *unhedged* financial assets and liabilities that it recognizes in its financial statements at either fair value or historical costs.<sup>15</sup>

Under the fair value option, an entity must specifically identify those financial assets and liabilities that it values on the balance sheet at current market prices in its footnotes. The adjustment to fair value results in **unrealized holding gains or losses** that firms recognize on the income statement. (Such gains or losses are *unrealized* because they represent market-determined adjustments to fair value from the previous reporting period to the current one.)

A firm need not apply the fair value option to all of its financial assets and liabilities. It can report some financial securities at historical cost/proceeds and others at fair value. An entity must separate the disclosure of financial instruments reported at fair value from those it reports on an historical basis. Finally, the election of the fair value option is irrevocable; an entity cannot return to historical cost reporting for financial instruments designated for fair value reporting.

## Financial Risk Information

Financial statement analysts must be aware that disclosures convey different information about financial risk management. With respect to financial instruments, for example, firms have the option of reporting assets and liabilities in one of three ways:

1. historical cost without a fair value hedge
2. fair value offset by a fair value hedge
3. fair value without a fair value hedge

Firms do not have to be consistent in their balance sheet reporting of financial instruments. An entity can elect to hedge certain financial instruments, while not hedging others. Moreover, the reporting entity can value some unhedged financial instruments at historical cost and others at fair value. Similarly, a reporting firm can enter into cash flow

### Fair value option

The financial reporting option that allows a firm to report an unhedged asset or liability at fair value instead of historical cost

### Unrealized holding gain or loss

The difference between the current fair value of an asset or liability and its previous fair value or historical cost

hedges for some future transactions, but not for others. These financial reporting inconsistencies make it imperative to carefully analyze risk management information.

Three sections of SEC Form 10-K contain information about a firm's financial risk and its attempts to manage them. Financial statement analysts should carefully evaluate the information contained in these relevant disclosures.

1. *Item 1A. Risk factors*
2. *Item 7A. Quantitative and qualitative disclosures about risk management*
3. *Item 8. A risk management footnote to the financial statements*

## Industry Insight **6-4**

### Coca-Cola's Financial Risk Disclosures

The Coca-Cola Company disclosed financial risk management information in three items of its 2012 Form 10-K. In *Item 1A Risk Factors* Coke reported that two subsections entitled:

- Fluctuations in foreign currency could affect our financial result
- If interest rates increase, our net income could be negatively affected.

Coke noted the following regarding interest rates in *Item 1A*, "When, and where applicable, we use financial derivative instruments to reduce our exposure to interest risk. The firm reaffirmed those risks by citing foreign currency exchange rates and interest rates (along with commodity prices) were risk factors in *Item 7A Quantitative and Qualitative Disclosures about Market Risk*."

Coke disclosed financial risk management information in two footnotes to its financial statements in *Item 8* of the 2012 Form 10-K. In *Note 1, Summary of Significant Accounting Policies*, Coke stated that one of its risks is that "... one or more of our counterparty financial institutions defaulting on obligations to us." *Note 5* to the financial statements disclosed *Hedging Transactions and Derivative Financial Instruments*. This note dedicated sections to *Cash Flow Hedge Strategy* and *Fair Value Hedge Flow Strategy*. The length of *Note 5* attested to the complexity of financial risk management strategies and their extensive disclosures by spanning six pages of the firm's annual report.

Financial risk management disclosures can be complex because the transactions that created them are sometimes quite complicated. In addition, new methods for managing risk are often devised by firms (and their investment bankers). The financial statement analyst should spend considerable time and effort in order to comprehend

how a reporting entity manages its financial risk. Finally, inability to understand risk management disclosures after doing diligence is a serious red flag to the financial statement analyst. One is better off allocating resources to other firms and steering clear of the unintelligible risk management disclosures.

## Summary

---

This chapter examined the financial disclosures and analytical implications of financial risk management strategies. It began by noting that the inherent uncertainty of future events creates financial risk. Firms can alleviate that risk or profit from it, depending upon their objective. Different objectives distinguish financial risk management from financial speculation. Financial risk management reduces financial statement volatility by mitigating price fluctuations, while financial speculation seeks to maximize profits by anticipating future price movements. Firms design financial risk management strategies to offset the risk of an uncertain future. Speculators embrace risk because they essentially bet on future events.

Chapter 6 focused on financial risk management and its financial statement implications. Derivative instruments are integral for managing financial risk. Firms acquire instruments derived from another asset in order to hedge against market fluctuations in the fair value of a financial account or to protect against cash flow exposure. The hedging objective determines financial disclosures. If structured properly, fair value hedges eliminate earnings volatility by countering the gain (loss) on the underlying with an offsetting loss (gain) on the hedge. Cash flow hedges establish certain future cash payments by locking in purchase prices or interest payments.

<b>Key Terms</b>	<b>Page #</b>
Call option	229
Cash flow hedge	236
Derivative	232
Fair value hedge	236
Fair value option	247
Financial risk management	228
Financial speculation	228
Forward contract	234
Hedging strategies	232
Interest rate swap	235
In the money	231
Lock-in	232
Option	235
Out of the money	231
Underlying	232
Unrealized holding gain or loss	247

## Assignments

### Problems

#### 6-1. The GAAP

The GAAP, a retailer of clothing for working professionals, presented its three most recent income statements as follows (in millions):

	2015	2014	2013
Sales revenues	\$ 133	\$ 126	\$ 120
Cost of goods sold	93	88	84
Gross profit	40	38	36
Selling, general, and administrative expenses	14	13	12
Operating income	26	25	24
Interest expense	8	7	7
Gain (loss) on financial speculation	(15)	9	2
Income before taxes	3	27	19
Income tax expense	1	9	6
Net income	\$ 2	\$ 18	\$ 13

In a footnote to its financial statements, the firm stated:

In addition to retailing quality merchandise to working professionals, The GAAP engages in financial speculation when management anticipates the opportunity to increase shareholder wealth. Speculation centers on the acquisition of commodities, wherein the firm enters into forward contracts to purchase commodities at specified purchase prices. Upon acquisition of such commodities, The GAAP immediately resells them to brokers at market prices. The firm only engages in financial speculation in those instances where management expects commodity prices to increase over the life of the forward contracts.

#### Required:

- Analyze the financial performance of The GAAP from 2013 to 2015 by computing vertical common sized income statements.
- Differentiate between the returns on *operating* profit and *net* profit margins.
- Comment on the sustainability of The GAAP's business model in creating wealth for its shareholders.

#### 6-2. Central Air

Regional airline Central Air hedges against changes in jet fuel costs by contracting with its suppliers on an annual basis. In its footnote to the financial statements, Central Air states:

We contract on a forward basis with our petroleum providers for the express purpose of securing an acceptable price for jet fuel with which to conduct operations. Based on the hedged price of petroleum, we price our flights so that jet fuel costs are 20% of operating revenue.

Central Air designates these forward contracts as cash flow hedges. Our firm purchases, pays, and consumes all hedged jet fuel within the reported year. As such, we do not carry any jet fuel in inventory.

The following table presents the contracted and market prices for jet fuel for the three most recent years (amounts in thousands):

	2015	2014	2013
Contracted Price	\$ 130,000	\$ 125,000	\$ 120,000
Market Price	145,000	115,000	100,000

**Required:**

- Analyze the effectiveness of Central Air's cash flow hedges by contrasting the amount of *income after jet fuel expense but before other operating expenses* generated from the cash flow hedge versus that income level if the air carrier did not hedge jet fuel prices.
- Discuss why the balance sheets would *not* report a jet fuel asset or liability hedge or other comprehensive income pertaining to hedged jet fuel.

**6-3. Central Air**

Use the data presented in Problem 6-2 above, except assume that Central Air only consumes 75% of the contracted fuel within the year of acquisition, and uses the remaining 25% in the following year. Furthermore, assume that the air carrier did not have any jet fuel inventory on December 31, 2012, and that the firm recognized revenues equal to those amounts computed for Problem 6-2.

**Required:**

- Analyze the effectiveness of Central Air's cash flow hedges by contrasting the amount of *income after jet fuel expense but before other operating expenses* generated from the cash flow hedge versus that income level if the air carrier did *not* hedge jet fuel prices.
- Determine the amount of jet fuel asset or liability hedge and other comprehensive income pertaining to hedged jet fuel that Central Air would report on its balance sheets.

**6-4. Redlands Retail, Inc.**

Redlands Retail, Inc. reports the following statement excerpts pertaining to long-term debt (in thousands):

Income Statement	2015		2014	
Other revenues and expenses				
Interest expense	\$	300,000	\$	100,000

Balance Sheet	2015		2014	
Long-term liabilities				
Notes payable at fair value	\$	4,055,510	\$	1,645,400

In addition, the firm discloses the following footnote:

In its first two years of operations, the firm's long-term debt consists of outstanding notes payable to the Inland Empire Bank. These debt obligations carry fixed rates of interest. The \$2,000,000 borrowed at the beginning of 2014 had a 3% interest rate, and the \$3,000,000 borrowed at the beginning of 2015 cost 4%. Both obligations mature in five years—at the beginning of 2019 for the 2014 note, and 2020 for the 2015 note.

Redlands Retail entered into fair value swaps immediately after securing the funds. The swaps effectively converted Redlands' fixed interest rate debt to obligations that vary with market rates of interest. Each swap agreement requires Redlands to pay the average-for-the-year market rate of interest for notes in that risk category.

**Required:** For both 2014 and 2015:

- a. Determine the annual variable cost of borrowing (before taxes).
- b. Discuss the unreported effects of the fair value hedge on the income statements. Speculate as to why Redlands Retail did not disclose these effects.
- c. Contrast the effect of hedging notes payable on net income with that of not hedging notes payable. (Ignore income tax considerations.)
- d. Analyze the effect of hedging notes payable versus not hedging them on the balance sheet. (Ignore income tax considerations.)

## Industry Cases

### 6-1. Nonalcoholic Beverage Industry

Access the most recent Form 10-Ks for Coca-Cola and PepsiCo at [sec.gov](http://sec.gov). Examine the financial risk management disclosures presented in *Items 1A, 7A, and 8* of each firm's 10-K and prepare a brief report about their management of financial risk.

### **6–2. Discount Retail Industry**

Access the most recent Form 10-Ks for Target and Walmart at [sec.gov](http://sec.gov). Examine the financial risk management disclosures presented in *Items 1A, 7A, and 8* of each firm's 10-K and prepare a brief report about their management of financial risk.

### **6–3. Computer Hardware Industry**

Access the most recent Form 10-Ks for Dell and Hewlett-Packard at [sec.gov](http://sec.gov). Examine the financial risk management disclosures presented in *Items 1A, 7A, and 8* of each firm's 10-K and prepare a brief report about their management of financial risk.

### **6–4. Franchised Restaurant Industry**

Access the most recent Form 10-Ks for McDonald's and Yum Brands at [sec.gov](http://sec.gov). Examine the financial risk management disclosures presented in *Items 1A, 7A, and 8* of each firm's 10-K and prepare a brief report about their management of financial risk.

### **6–5. Airline Industry**

Access the most recent Form 10-Ks for American Airlines and Southwest Airlines at [sec.gov](http://sec.gov). Examine the financial risk management disclosures presented in *Items 1A, 7A, and 8* of each firm's 10-K and prepare a brief report about their management of financial risk.

## Endnotes

---

- 1 Pricing of options and the reduction of their value over time exceed the scope of this text. We have simplified these inputs to focus on how financial speculation affects the financial statements.
- 2 The time value of an option decreases over time because the holder of the option has less time in which to exercise the option.
- 3 There are nuanced differences between forward and futures contracts that exceed the scope of this text.
- 4 Note that this is the second of Redlands' two bank borrowings. The first one occurred in 2012. It was for \$120,000 at a fixed rate of 8.3%
- 5 In reality, a financial intermediary would bring the parties together.
- 6 This example illustrates the concept of an interest rate swap. It is highly unlikely that an entity would engage in a swap transaction for an ordinary bank note of relatively little monetary value.
- 7 FASB ASC 815-10.
- 8 This statement assumes that the firm would report a balance sheet immediately after receipt of the funds.
- 9 This occurs in order to equate the yield on the higher interest rate loan to the current yield, which is the (lower) market rate of interest.
- 10 This computation assumes that the reader understands time value of money concepts and computations. We refer uninformed readers to an introductory corporate (or managerial) finance text for a discussion of these topics. Note also that the discount periods number 9 because one year has elapsed on the ten-year note.
- 11 The firm could report the fair value of the note payable liability of \$105,996 on the face of its balance sheet instead of its \$100,000 under FASB 825-10. Most firms report at historical cost on the balance sheet and disclose fair value in their footnotes.
- 12 The opposite results would occur if Redlands held variable interest rates on financial liabilities or fixed interest rates on financial assets.
- 13 Chapter 7 addresses one such prominent departure: the reporting of passive security investments at market values.
- 14 FASB ASC 825-10.
- 15 One of the reasons for the optional fair value or historical cost accounting was so that firms would not have to hedge financial instruments in order to recognize those instruments at fair value.