

Accounting for Derivatives and Hedging Activities



Patriani Wahyu Dewanti, S.E., M.Acc.

Accounting Department

Faculty of Economics

Yogyakarta State University



ACCOUNTING FOR DERIVATIVE INSTRUMENTS AND HEDGING ACTIVITIES

- *FASB Statement No. 105*, “Disclosure of Information About Financial Instruments with Off-Balance Sheet Risk and Financial Instruments with Concentrated Credit Risk” (March 1990)
- *FASB Statement No. 107*, “Disclosures About Fair Value of Financial Instruments” (December 1991), which superseded and amended *Statement No. 105*
- *FASB Statement No. 115*, “Accounting for Certain Investments in Debt and Equity Securities” (May 1993)
- *FASB Statement No. 119*, “Disclosure About Derivative Financial Instruments and Fair Value of Financial Instruments” (October 1994), which *Statement No. 133* supersedes



Hedge Accounting

GAAP's objective is to account for derivative instruments used to hedge risks so that the financial statements reflect their effectiveness in reducing the company's exposure to risk. For the financial statements to reflect the derivative contract's effectiveness, both changes in the hedged item's fair value and the hedging instrument's fair value resulting from the underlying change must be recorded in the same period. The investor can then clearly assess the effectiveness of the strategy. The term *hedge accounting* refers to accounting designed to record changes in the value of the hedged item, and in the value of the hedging instrument in the same accounting period.



Hedge Effectiveness

Once a type of risk is identified that qualifies for hedge accounting, the effectiveness of the hedge to offset gains or losses in the item being hedged must be assessed. This assessment is done when the hedge is first entered into and during the hedge's existence. In order for a hedge to qualify for hedge accounting, the derivative instrument must be considered highly effective in offsetting gains or losses in the item being hedged. ASC Topic 815 requires statistical or other numerical tests to assess hedge effectiveness, unless a specific exception exists. Companies must choose a methodology to be applied to assess hedge effectiveness. Two common approaches are critical term analysis and statistical analysis.



Types of Hedge Accounting

Fair value hedge accounting. The item being hedged is an existing asset or liability position or firm purchase or sale commitment. In this case, both the item being hedged and the derivative are marked to fair value at the end of the quarter or year-end on the books. The gain or loss on these items is reflected immediately in earnings. The risk being hedged is the variability in the fair value of the asset or liability.

Cash flow hedge accounting. The derivative hedges the exposure to the variability in expected future cash flows associated with a risk. The exposure may be related to a recognized asset or liability (such as a variable-rate financial instrument) or to a forecasted transaction such as a forecasted purchase or sale. The derivative is marked to fair value at year-end and is recorded as an asset or liability. The effective portion of the related gain or loss's recognition is deferred until the forecasted transaction affects income. The gain or loss is included as a component of accumulated other comprehensive income (AOCI) in the balance sheet's stockholders' equity section.

Hedge of net investment in a foreign subsidiary. This will be discussed in Chapter 14.



October 1, 2011. No Entry

December 31, 2011. Assume that the market price of copper is \$310 on this date. If the market price stays the same, Gre would pay Bro \$10 × 100,000 = \$1,000,000 at the expiration of the contract in nine months. We will use this information to estimate the value of the forward contract at December 31, 2011. Because the \$1,000,000 is our estimate of a payment to be paid in nine months, we must use present value concepts to estimate its fair value on December 31, 2011. Assuming that a discount rate of 1 percent per month is reasonable, the estimated fair value of this contract is:

$$1,000,000 / (1.01)^9 = \$914,340$$

Other comprehensive income (−SE)	914,340	
Forward contract (+L)		914,340



March 31, 2012. Assume that the market price of copper is \$295. If this price remains constant, then the company can anticipate receiving $\$5 \times 100,000 = \$500,000$ in six months. The estimated fair value of the forward contract is $\$500,000 / (1.01)^6 = \$471,023$. We have moved from a liability situation to an asset situation. The entry to adjust the carrying value of the forward contract is:

Forward contract (+A)	471,023	
Forward contract (-L)	914,340	
Other comprehensive income (+SE)		1,385,363

Notice that the balance for other comprehensive income has moved from a debit balance of \$914,340 to a credit balance of \$471,023.



June 30, 2012. Assume that the market price of copper is \$290. If this price remains constant, then the company can anticipate receiving $\$10 \times 100,000 = \$1,000,000$ in three months. The estimated fair value of the forward contract is $\$1,000,000 / (1.01)^3 = \$970,590$. We must increase the forward contract asset and other comprehensive income by \$499,567 (\$970,590 desired balance – \$471,023 current balance). The entry to adjust the carrying value of the forward contract is:

Forward contract (+A)	499,567	
Other comprehensive income (+SE)		499,567



September 30, 2012. Assume that the company produced the copper this quarter and sold it on September 30, 2012. The cost was as expected at \$28,900,000 for 100,000 pounds of copper. The market price of copper on this date is \$310. Gre sells the copper in the market at \$310 and will settle the forward contract by paying Bro \$1,000,000 $[(\$310 - \$300) \times 100,000]$.

The journal entries to record the sale are:

Cash (+A)	31,000,000	
Sales (+R, +SE)		31,000,000
Cost of goods sold (+E, -SE)	28,900,000	
Inventory (-A)		28,900,000

The journal entries to record the settlement of the forward contract are:

Sales (-R, -SE)	1,000,000	
Other comprehensive income (-SE)	970,590	
Cash (-A)		1,000,000
Forward contract (-A)		970,590



FAIR VALUE HEDGES Fair value hedge accounting is appropriate for highly-effective hedges of either existing assets or liabilities or firm sales/purchase commitments.

Wav Company refines oil. Wav purchases raw crude from various producers and, after the refinement process, sells it to gasoline wholesalers. The price that Wav receives from a gasoline wholesaler depends on the raw crude market price as well as other factors. Typically, Wav refines the oil almost immediately after purchase; however, because of some factory breakdowns, it has about 100,000 barrels of oil that will not be processed for six months. Wav is concerned about how to maintain the value of that oil. While it would be nice if the oil was worth more in six months than it currently is worth, there are no guarantees, and it might be worth less. As a result, Wav is considering entering into a derivative contract that will help it maintain its net investment value.



Inventory The change in the inventory value from November 1, 2011 is also \$2 (\$92 – \$90). So the inventory would be increased by \$200,000:

Inventory (+A)	200,000	
Gain on Inventory (+Ga, +SE)		200,000

Notice that the inventory carrying value is now \$8,600,000 + \$200,000 = \$8,800,000 compared to \$9,200,000 for its market value. This is the result of using a mixed-attribute model.

On March 31, 2012, the spot price is \$89. If the market price of crude remains at \$89, then Wav will receive \$100,000 in one month. The estimated value of the forward is \$100,000/1.01 = \$99,009.

The entry to record the forward contract is:

Forward contract (+A)	99,009	
Forward contract (-L)	192,196	
Gain on Forward contract (+Ga, +SE)		291,205

The inventory entry is $(\$92 - \$89) \times 100,000 = \$300,000$.

Loss on Inventory (+Lo, -SE)	300,000	
Inventory (-A)		300,000

The book value of the inventory is now \$8,900,000 (\$9,000,000 + \$200,000 – \$300,000).

On April 30, 2012 the contract settles. The spot price is \$87.50. Wav will receive \$250,000 [$(\$90 - \$87.50) \times 100,000$] to settle the contract.



Forward Contract

Cash (+A)	250,000	
Forward contract (-A)		99,009
Gain on Forward contract (+Ga, +SE)		150,991

Inventory

Loss on Inventory (+Lo, -SE)	150,000	
Inventory (-A)		150,000

Summary of Effect on Earnings

Date	Inventory Adjustment	Forward Contract Adjustment	Net Effect
December 31, 2011	+200,000	-192,196	+7,804
March 31, 2012	-300,000	+291,205	-8,795
April 30, 2012	-150,000	+150,991	+991
Total	-250,000	+250,000	+0



Additional Cash Flow Hedge Examples

January 15, 2011

Fuel contract option (+A)

1,000

Cash (-A)

1,000

March 31, 2011

Fuel contract option (+A)

23,752

Other comprehensive income—
unrealized holding gain on fuel option
contract (+SE)

23,752



May 31, 2011

Fuel inventory (+A)	130,000	
Cash (-A)		130,000
Cash (+A)	30,000	
Fuel contract option (-A)		24,752
Other comprehensive income (+SE)		5,248

June 15, 2011

Cost of goods sold (+E, -SE)	130,000	
Fuel inventory (-A)		130,000
Other comprehensive income (-SE)	30,000	
Cost of goods sold (-E, +SE)		30,000



FUTURES CONTRACTS—CASH FLOW HEDGE OF FORECASTED TRANSACTION

December 1, 2011

Futures contract (+A)	10,000	
Cash (-A)		10,000

December 31, 2011

Futures contract (+A)	18,060	
Other comprehensive income (+SE)		18,060

January 31, 2012

Other comprehensive income (-SE)	23,100	
Futures contract (-A)		23,100

100 contracts × 42,000 gallons per contract × (\$1.3995 - \$1.4050) = \$23,100 —

Accumulated other comprehensive income account



Cash (+A)	4,960	
Futures contract (-A)		4,960
Heating oil inventory (+A)	5,877,900	
Cash (-A)		5,877,900

Cash (+A)	8,400,000	
Sales (+R, +SE)		8,400,000
Cost of goods sold (+E, -SE)	5,877,900	
Heating oil inventory (-A)		5,877,900
Cost of goods sold (+E, -SE)	5,040	
Other comprehensive income (+SE)		5,040



Additional Fair Value Hedge Examples

March 31, 2011

Forward contract (+A)	197,030	
Unrealized gain on forward contract (+Ga, +SE)		197,030
To record the change in the fair value of the forward contract.		
Unrealized loss on firm purchase commitment (+Lo, -SE)	197,030	
Firm purchase commitment (+L)		197,030
To record the change in the firm purchase commitment.		

At June 30, 2011, both contracts are settled when the market price of whiskey is \$14.50. The entries are as follows:

June 30, 2011

Cash (+A)	50,000	
Unrealized loss on forward contract (+Lo, -SE)	147,030	
Forward contract (-A)		197,030
Firm purchase commitment (-L)	197,030	
Whiskey inventory (+A)	1,450,000	
Cash (-A)		1,500,000
Unrealized gain on firm purchase commitment (+Ga, +SE)		147,030



ACCOUNTING FOR HEDGE CONTRACTS: ILLUSTRATIONS OF CASH FLOW AND FAIR VALUE HEDGE ACCOUNTING USING INTEREST RATE SWAPS

The interest rate swap fair-value computation at December 31, 2011 is:

Present value at December 31, 2011, of payment to be made to Watson on December 31, 2012:

$$\$1,000 / (1.085) = \$922$$

Present value at December 31, 2011, of estimated payment to be paid to Watson on December 31, 2013:

$$\$1,000 / (1.085)^2 = \$848$$

The total estimated value of the interest rate swap at December 31, 2011, is:

$$\$922 + \$848 = \$1,770$$



CASH FLOW HEDGE ACCOUNTING ENTRIES

January 1, 2011

Cash (+A)	200,000	
Loan payable (+L)		200,000
To record receipt of loan proceeds on Jac's books.		

December 31, 2011

Interest expense (+E, -SE)	18,000	
Cash (-A)		18,000
To record the payment of interest to State Bank.		
Other comprehensive income (-SE)	1,770	
Interest rate swap (+L)		1,770
To record the fair value of the interest rate swap.		

December 31, 2012

Interest expense (+E, -SE)	17,000	
Cash (-A)		17,000
To record interest payment to State Bank, \$200,000 × 0.085 = \$17,000; the variable interest rate was determined as of January 1, 2012, as LIBOR + 2%.		
Interest expense (+E, -SE)	1,000	
Cash (-A)		1,000
To record payment to Watson of interest-rate-swap settlement.		



Interest rate swap (-L)	1,770	
Interest rate swap (+A)	458	
Other comprehensive income (+SE)		2,228
To adjust the interest rate swap to fair value at December 31, 2012; the other comprehensive income account now has a balance of \$458 credit.		
<i>December 31, 2013</i>		
Interest expense (+E, -SE)	18,500	
Cash (-A)		18,500
To record interest payment to State Bank, $\$200,000 \times 0.0925 = \$18,500$; the variable interest rate was determined as of January 1, 2013, as LIBOR + 2%.		
Cash (+A)	500	
Interest expense (-E, +SE)		500
To record receipt of interest-rate-swap settlement from Watson.		
Other comprehensive income (-SE)	458	
Interest rate swap (-A)		458
To adjust the interest rate swap to fair value at December 31, 2013, which is zero; notice that the other comprehensive income account is also zero.		
Loan payable (-L)	200,000	
Cash (-A)		200,000
To record payment of loan agreement.		



Fair Value Hedge Accounting

FAIR VALUE HEDGE ACCOUNTING ENTRIES

January 1, 2011

Cash (+A)	200,000	
Loan payable (+L)		200,000

To record the receipt of a loan from State Bank.

December 31, 2011

Interest expense (+E, -SE)	18,000	
Cash (-A)		18,000

To record fixed rate interest payment to State Bank.



Interest rate swap (+A)	1,770	
Loan payable (+L)		1,770

To mark both the swap and the loan to market to reflect the market rate of interest on the swap agreement at December 31, 2011, 8.5%. Because the market rate is below the fixed interest rate of 9%, the loan's fair value has increased. This is similar to a bond being sold at a premium.

December 31, 2012

Interest expense (+E, -SE)	18,000	
Cash (-A)		18,000

To record fixed rate interest payment to State Bank.

Cash (+A)	1,000	
Interest expense (-E, +SE)		1,000

To record net settlement from Watson;
the variable rate is 8.5%, so Watson owes Jac
 $0.005 \times \$200,000 = \$1,000$.

Loan payable (-L)	2,228	
Interest rate swap (-A)		1,770
Interest rate swap (+L)		458

To mark both the swap and the loan to market; the carrying value of the loan is now $\$200,000 - \$458 = \$199,542$, a discount. Remember that the variable rate, LIBOR + 2%, on December 31, 2012, is 9.25%.



December 31, 2013

Interest Expense (+E, -SE)	18,000	
Cash (-A)		18,000
To record fixed-rate interest payment to State Bank.		
Interest expense (+E, -SE)	500	
Cash (-A)		500
To record the payment of interest		
Interest rate swap (-L)	458	
Loan payable (+L)		458
To mark the swap and the loan to market; the carrying value of the loan is now \$200,000, which will now be paid.		
Loan payable (-L)	200,000	
Cash (-A)		200,000
To record payment of the loan.		



Date	Interest Rate Swap Balance Sheet Debit—Asset; Credit—Liability	Loan Payable Balance Sheet	Interest Expense
January 1, 2011		\$200,000	
December 31, 2011	\$1,770 debit	\$201,770	\$18,000
December 31, 2012	\$ 458 credit	\$199,542	\$17,000
December 31, 2013			\$18,500



FOREIGN CURRENCY DERIVATIVES AND HEDGING ACTIVITIES

CASH FLOW HEDGES For a forward contract to qualify for cash flow hedge accounting, the contract must have the following characteristics:

1. Cash flow hedges can be used in recognized foreign currency–denominated asset and liability situations if the variability of the cash flows is completely eliminated by the hedge. This requirement is generally met if the settlement date, currency type, and currency amounts match the expected payment dates and amounts of the foreign currency–denominated receivable or payable. If any of these critical terms don't match between the hedged item and the hedging instrument, then the contract is designated a fair value hedge with current earnings recognition of changes in the value of the hedging derivative and the hedged item. (This is illustrated later.)
2. According to GAAP, the transaction gain or loss arising from the remeasurement of the foreign currency–denominated asset or liability is offset by a related amount reclassified from other comprehensive income to earnings each period. Thus, the foreign currency–denominated asset or liability is marked to fair value at year-end, and the gain or loss is recognized in income. The cash flow hedge is also marked to fair value at year-end. Like other cash flow hedges, the gain or loss is included in other comprehensive income. At year-end, a portion of the gain or loss included in other comprehensive income is then recognized in income to offset the gain or loss on the foreign currency–denominated asset or liability.
3. Finally, the premium or discount related to the hedge is amortized to income using an effective interest rate.



Example of Accounting for a Cash Flow Hedge of an Existing Foreign Currency–Denominated Accounts Receivable

	November 2, 2011	December 31, 2011	January 30, 2012
Spot rate	\$1.650	\$1.660	\$1.665
90-day forward rate	\$1.638		
30-day forward rate		\$1.655	

The entry on November 2, 2011, to record the sale is:

Accounts receivable (fc) (+A)	\$165,000	
Sales (+R, +SE)		\$165,000

To record the sale of equipment to Howard

Company, $\text{£}100,000 \times \$1.6500$, the spot rate at
November 2, 2011.



ACCOUNTS RECEIVABLE ADJUSTMENT

Accounts receivable (fc) (+A)	\$1,000	
Exchange gain (+Ga, +SE)		\$1,000

To adjust accounts receivable to spot rate at year-end [$\text{£}100,000 \times (\$1.660 - \$1.650)$].

FORWARD CONTRACT ADJUSTMENT Win's 90-day forward contract expires on January 30, 2012, with Win set to receive \$1.638 per pound. At December 31, 2011, a 30-day forward contract rate is \$1.655. A 30-day forward contract entered into on December 31, 2011 would be settled on January 30, 2012. Based on the change in the forward rate, the estimated loss on the forward contract is $\text{£}100,000 \times (\$1.655 - \$1.638) = \$1,700$. However, this is the estimated loss to be realized in one month. To estimate the fair value of the forward contract on December 31, 2011, we must compute the present value of this amount:

Date	Forward Contract Rate	Forward Contract Rate at This Date	Difference	×	100,000	Factor	Present Value at Date Below
December 31	1.638	1.655	0.017		1,700	1.01 ¹	1,683

The approximate fair value of the forward contract is \$1,683. The December 31, 2011, entry is:

Other comprehensive income (-SE)	\$1,683	
Forward contract (+L)		\$1,683



ENTRY TO OFFSET ACCOUNTS RECEIVABLE EXCHANGE GAIN Thus far at December 31, 2011, an exchange gain of \$1,000 has been recorded as a result of marking the accounts receivable to fair value. The related forward contract has also been marked to market with the resulting loss recorded in other comprehensive income. We must now record an entry to offset the exchange gain in order to properly account for this cash flow hedge. The entry is:

Exchange loss (+Lo, -SE)	\$1,000	
Other comprehensive income (+SE)		\$1,000



$$\text{Hedged asset or liability fair value at the hedge date} \times (1 + r)^n = \text{Hedge contract cash flow}$$

Here the hedged accounts receivable fair value at November 2, 2011, is \$165,000, the hedge contract cash flow is £100,000 × \$1.638 = \$163,800, and $n = 3$ because the contract will expire in 90 days, or three months. We will solve for r , the monthly implicit interest rate.

$$\$165,000(1 + r)^3 = \$163,800$$

$$(1 + r)^3 = 0.99273$$

$$\sqrt[3]{(1 + r)^3} = \sqrt[3]{(0.99273)}$$

$$(1 + r) = 0.99757$$

$$r = -0.00243, \text{ or } -0.243\% \text{ per month}$$

Here is the amortization table for this discount amortization:

	Discount Amortization: Balance × 0.00243	Balance
		165,000
November 30	401	164,599
December 31	400	164,199
January 30	399	163,800
Total discount amortization	1,200	



The journal entry at December 31, 2011, to record November and December amortization is:

Exchange loss (+Lo, -SE)	\$801	
Other comprehensive income (+SE)		\$801

Cash (+A)	\$166,500	
Accounts receivable (fc) (-A)		\$166,000
Exchange gain (+Ga, +SE)		\$ 500

Other comprehensive income (-SE)	\$1,017	
Forward contract (+L)		\$1,017



OFFSET GAIN ENTRY Next, we must record a loss to offset the exchange gain recorded related to the receivable:

Exchange loss (+Lo, -SE)	\$ 500	
Other comprehensive income (+SE)		\$ 500
Forward contract (-L)	\$2,700	
Cash (-A)		\$2,700

DISCOUNT OR PREMIUM AMORTIZATION ENTRY From the previous table, \$399 of the discount must be amortized for the period December 31, 2011, to January 30, 2012:

Exchange loss (+Lo, -SE)	\$399	
Other comprehensive income (+SE)		\$399



Accounts Receivable (Asset)

November 2, 2011—initial sale date	+ \$165,000
December 31, 2011—adjusted to spot rate	+ <u>1,000</u>
Balance on December 31, 2011 (spot rate $\$1.66 \times \text{£}100,000$)	\$166,000
January 30, 2012—adjusted to spot rate	+ <u>500</u>
Balance on January 30, 2012, before settlement	\$166,500

Forward Contract

November 2, 2011—initial contract date	No entry—net settlement
December 31, 2011—adjusted to fair value estimate	+ <u>1,683—liability</u>
Balance on December 31, 2011	\$1,683 credit—liability
January 30, 2012—adjusted to fair value	<u>\$1,017 credit</u>
Balance before settlement	\$2,700 credit
Settlement	<u>\$2,700 debit</u>
Balance after settlement	\$ 0



Other Comprehensive Income

November 2, 2011	No entry
December 31, 2011—adjust forward contract to fair value estimate	\$1,683 debit
Offset gain on hedged item—accounts receivable	1,000 credit
Discount amortization for November and December	<u>801 credit</u>
Balance on December 31, 2011	\$ 118 credit

January 30, 2012—adjust forward contract to fair value estimate	\$1,017 debit
Offset gain on hedged item—accounts receivable	500 credit
Discount amortization for January	<u>399 credit</u>
Balance on January 30, 2012	\$ 0

Income Effect

December 31, 2011

Gain on hedged item	\$ 1,000
Offsetting amount from OCI due to forward contract and cash-flow-hedge accounting	-1,000
Discount amortization—exchange loss	<u>- 801</u>
Net exchange loss at December 31, 2011	-\$ 801

January 30, 2012

Gain on hedged item	\$ 500
Offsetting amount from OCI due to forward contract and cash-flow-hedge accounting	-500
Discount amortization-exchange loss	<u>-399</u>
Net exchange loss at January 30, 2012	-\$399



Fair Value Hedge Accounting: Foreign Currency– Denominated Receivable Example

	December 1, 2011	December 31, 2011	January 30, 2012
Spot rate	\$0.007500	\$0.007498	\$0.007497
30-day futures rate	\$0.007490	\$0.007489	\$0.007488
60-day futures rate	\$0.007490	\$0.007488	\$0.007486

The bold rates are the relevant rates for accounting purposes. The forward contract is carried at market value, which is the forward rate. Journal entries on the books of U.S. Oil are as follows:

December 1, 2011

Accounts receivable (fc) (+A)	\$112,500	
Sales (+R, +SE)		\$112,500
To record sales to Monato Company (15,000,000 yen × \$0.007500 spot rate).		
Contract receivable (+A)	\$112,350	
Contract payable (fc) (+L)		\$112,350
To record forward contract to deliver 15,000,000 yen in 60 days. Receivable: 15,000,000 yen × \$0.007490 forward rate.		



December 31, 2011

Exchange loss (+Lo, -SE)	\$ 30	
Accounts receivable (fc) (-A)		\$ 30
To adjust accounts receivable to year-end spot exchange rate [15,000,000 yen \times (\$0.007500 - \$0.007498) = \$30].		
Contract payable (fc) (-L)	\$14.85	
Exchange gain (+Ga, +SE)		\$14.85
To adjust contract payable to exchange broker to the year-end forward exchange rate. Payable: 15,000,000 yen \times (\$0.007490 - \$0.007489)/(1.01)		



January 30, 2012

Cash (fc) (+A)	\$ 112,455	
Exchange loss (+Lo, -SE)	15.15	
Accounts receivable (fc) (-A)		\$112,470.15
To record collection of receivable from Monato Company. Cash: 15,000,000 yen \times \$0.007497.		
Contract payable (fc) (+L)	\$112,335.15	
Exchange loss (-Lo, -SE)	119.85	
Cash (fc) (-A)		\$112,455
To record delivery of 15,000,000 yen from Monato to foreign exchange broker in settlement of liability.		
Cash (+A)	\$ 112,350	
Contract receivable (-A)		\$112,350
To record receipt of cash from exchange broker.		

Contract receivable (fc) (+A)	\$16,750	
Contract payable (+L)		\$16,750



Fair Value Hedge of an Identifiable Foreign Currency Commitment

October 2, 2011

Contract receivable (fc) (+A)	\$43,500	
Contract payable (+L)		\$43,500
To record forward contract to purchase 60,000 Canadian dollars for delivery in 180 days at a forward rate of \$0.725.		



December 31, 2011

Exchange loss (+Lo, -SE)	\$900	
Contract receivable (fc) (-A)		\$900
To record exchange loss: 60,000		
Canadian dollars \times (\$0.725 - \$0.71).		

However, this loss is offset by the increase in the value of the underlying firm commitment:

December 31, 2011

Change in value of firm commitment in	\$900	
Canadian dollars (fc) (+A)		
Exchange gain (+Ga, +SE)		\$900
To record exchange gain: 60,000 Canadian		
dollars \times (\$0.725 - \$0.71). (Payment in Canadian		
dollars will cost fewer US\$.)		



March 31, 2012

1. Contract payable (-L)	\$43,500	
Cash (-A)		\$43,500
To record settlement of forward contract with the exchange broker (denominated in U.S. dollars).		
2. Cash (fc) (+A)	\$40,800	
Exchange loss (+Lo, -SE)	1,800	
Contract receivable (fc) (-A)		\$42,600
To record receipt of 60,000 Canadian dollars from the exchange broker when the exchange rate is \$0.68.		
3. Change in value of firm commitment in Canadian dollars (+A)	\$ 1,800	
Exchange gain (+Ga, +SE)		\$ 1,800
To record the change in the value of the underlying firm commitment.		
4. Inventory (+A)	\$43,500	
Change in value of firm commitment in Canadian dollars (-A)		\$ 2,700
Accounts payable (fc) (+L)		40,800
To record receipt of 1,000 cases of bourbon at a cost of 60,000 Canadian dollars \times forward exchange rate of \$0.725.		
5. Accounts payable (fc) (-L)	\$40,800	
Cash (fc) (-A)		\$40,800
To record payment of 60,000 Canadian dollars to Canadian Distillers.		



Cash Flow Hedge of an Anticipated Foreign Currency Transaction

FORWARD CONTRACT ADJUSTMENT AT DECEMBER 31, 2011 Assume that the 60-day forward rate at December 31, 2011, is \$1.6900. We estimate the fair value of this forward contract as follows, assuming a 12 percent annual incremental borrowing rate:

Date	Forward Contract Rate	Forward Contract Rate at this Date	Difference × 500,000	Factor	Present Value at Date Below	
December 31	1.68	1.69	0.01	5,000	1.01 ²	4,901

The journal entry is:

Forward contract (+A)	\$4,901	
Other comprehensive income (+SE)		\$4,901



	Discount Amortization	Balance
		850,000
December 31	3,347	846,653
January 31	3,333	843,320
February 28	3,320	840,000
Total discount amortization	10,000	

The journal entry to record the discount amortization and related gain at December 31 is:

Other comprehensive income (-SE)	\$3,347	
Exchange gain (+Ga, +SE)		\$3,347

There are four journal entries on March 1.



Forward contract (+A)	\$ 15,099	
Other comprehensive income (+SE)		\$ 15,099
Equipment (+A)	\$860,000	
Cash (-A)		\$860,000
(1.72 × 500,000)		
Cash (+A)	\$ 20,000	
Forward contract (-A)		\$ 20,000



Other comprehensive income (–SE)	\$6,653	
Exchange gain (+Ga, +SE)		\$6,653

This table presents a summary of account balances:

Forward contract

December 2, 2011—no entry required	\$ 0
December 31, 2011	<u>+ 4,901 debit</u>
Balance on December 31, 2011	\$ 4,901 debit—asset
Fair value adjustment at March 1, 2012	<u>+15,099 debit</u>
Balance before settlement on March 1, 2012	\$20,000 debit—asset

Other Comprehensive Income

December 31, 2011, adjustment of forward contract to fair value	\$ 4,901 credit
December 31, 2011, amortization of discount	<u>3,347 debit</u>
Balance on December 31, 2011	\$ 1,554 credit
March 1, 2012, adjustment of forward contract to fair value	\$15,099 credit
March 1, 2012, amortization of discount	<u>\$ 6,653 debit</u>
Balance on March 1, 2012	\$10,000 credit



Speculation

	December 31, 2011	January 30, 2012
30-day futures	\$0.5450	\$0.5480
Spot rate	0.5500	0.5530

Journal entries on the books of U.S. International to account for the speculation are as follows:

November 2, 2011

Contract receivable (fc) (+A)	\$5,400	
Contract payable (+L)		\$5,400
To record contract for 10,000 euros \times \$0.5400 exchange rate for 90-day futures.		

December 31, 2011

Contract receivable (fc) (+A)	\$ 50	
Exchange gain (+Ga, +SE)		\$ 50
To adjust receivable from exchange broker and recognize exchange gain (10,000 euros \times \$0.5450 forward exchange rate for 30-day futures – \$5,400 per books).		

January 30, 2012

Cash (fc) (+A)	\$5,530	
Exchange gain (+Ga, +SE)		\$ 80
Contract receivable (fc) (–A)		\$5,450
To record receipt of 10,000 euros. The current spot rate for euros is \$0.5530.		
Contract payable (–L)	\$5,400	
Cash (–A)		\$5,400
To record payment of the liability to the exchange broker denominated in dollars.		



SUMMARY OF TYPES OF DERIVATIVES AND THEIR ACCOUNTING

Classification	Purpose	Recognition	Expected Effect of Hedge and Related Item
Speculation	To speculate in exchange rate changes	Exchange gains and losses are recognized currently, based on forward exchange rate changes.	Income effect equals exchange gains and losses recognized.
Hedge of a net asset or liability position	To offset exposure to existing net asset or liability position	Exchange gains and losses are recognized currently, but they are offset by related gains or losses on net asset or liability position.	Income effect equals the amortization of premium or discount. (Gains and losses offset.)
Hedge of an identifiable commitment	To offset exposure to a future purchase or sale and thereby lock in the price of an existing contract in U.S. dollars	Exchange gains and losses are recognized currently, but they are offset by related gains or losses in the firm commitment.	Income effect equals the difference in the change in value of the hedge instrument versus the firm commitment.
Hedge of an anticipated transaction	To offset exposure of possible future purchase or sale	Exchange gains or losses on the hedge are counted in other comprehensive income until the underlying transaction is complete.	No immediate income effect. Adjusts underlying transaction.
Hedge of a net investment in a foreign entity (see Chapter 14)	To offset exposure to an existing net investment in a foreign entity	Exchange gains and losses are recognized as other comprehensive income and will offset translation adjustments recorded on the net investment.	Income effect equals the change in the future value of the hedge versus the value of the net investment.



THANKS YOU