Derivative Accounting Presentation

*Overview, Accounting Treatment and Hedging Activities*
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1 Business Reasons for Derivatives
What is a Derivative?

- Derivatives are financial instruments whose returns are derived from those of other financial instruments.

- By using derivatives, companies and individuals can transfer, for a price, any desired risk to other parties who either have risks that offset or want to assume that risk.
Business Reasons for Using Derivatives

**Hedging**
- Trading to limit their exposure to adverse movements in the price of an asset.

**Arbitrage**
- Trading to lock in riskless profits.

**Speculation**
- Trading to take a position in the market, effectively betting on the probability of future price movements.
Role of Derivatives Markets

Risk Management

- Derivative prices are related to the prices of the underlying spot market and can be used to reduce or increase the risk of owning the spot items.

Price Discovery

- Forward and futures markets are an important source of information about future spot prices.

Operational Advantages

- Commissions and other trading costs are lower than spot market
- Greater Liquidity than the spot market

Market Efficiency

- Prices reflect true economic values of underlying assets.
Characteristics of Derivatives

- Once referred to as “off-balance sheet” instruments, now required to be carried on the balance sheet at fair market value
- **Leverage** - Subject to significant change in value (potential for gain or loss) with little or no initial investment
- **Cash or net settlement** – typically settle in cash based on the change in value of the underlying, without actually delivering or taking delivery of an asset
- May be exchange-traded or over-the-counter (“OTC”)
- May be “embedded” in other instruments
Types of Derivatives
Types of Derivatives

- Option Contracts
- Forward Contracts
- Futures Contracts
- Swaps and Swaptions
- Total Return Swaps
- Equity Derivatives
- Credit Default Swap
Options

- **Call** - A contract giving the holder the right, but not the obligation, to buy a specific asset for a fixed price during a specific period.

- **Put** - A contract giving the holder the right, but not the obligation, to sell a specific asset for a fixed price during a specific period.
Uses of Options

**Purchased puts** - used in situations similar to short forwards/futures

**Purchased calls** - used in situations similar to long forwards/futures

Decision may be based on:
- Likelihood of hedged transaction occurring
- Use options to protect downside while retaining upside (like insurance policy)
Options

Important Distinctions
- American/European/Bermudan/Asian
- Covered vs. Naked
- Intrinsic Value
- Embedded/Freestanding Options
- Exotic Options

Underlying Assets/Derivatives
- Bonds/Equities/Indices
- Currencies
- Futures
- Swaps
Option Characteristics

- Purchaser pays/seller receives a premium up front

\[
\begin{array}{ccc}
\text{Premium} & \times & \text{# of Contracts} \\
2.5 & \times & 1 \\
\end{array}
\]

\[
\text{Total Cost} = 250.00
\]

- Purchaser enjoys upside potential with downside limited to premium paid

- Seller bears downside risk with upside limited to the premium received
# Options Profit/Loss Terminology

<table>
<thead>
<tr>
<th></th>
<th>Call</th>
<th>Put</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-the-Money</td>
<td>X Less than P</td>
<td>X Greater than P</td>
</tr>
<tr>
<td>At-the-Money</td>
<td>X = P</td>
<td>X = P</td>
</tr>
<tr>
<td>Out-of-the-Money</td>
<td>X Greater than P</td>
<td>X Less than P</td>
</tr>
</tbody>
</table>

- **X** = exercise (or strike) price
- **P** = current underlying stock price

![Diagram showing the profit and loss for different scenarios of call and put options.](image)
### Option Premium

<table>
<thead>
<tr>
<th>Option</th>
<th>Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option</td>
<td>Premium = Intrinsic Value + Time Value</td>
</tr>
<tr>
<td><strong>In-The-Money Options:</strong></td>
<td>Premium = Intrinsic Value + Time Value</td>
</tr>
<tr>
<td><strong>At-The-Money Options:</strong></td>
<td>Premium = All Time Value</td>
</tr>
<tr>
<td><strong>Out-Of-The-Money Options:</strong></td>
<td>Premium = All Time Value</td>
</tr>
</tbody>
</table>

![Diagram showing the breakdown of the premium into Intrinsic Value and Time Value](image-url)
Understanding an expiration profit-loss chart

- Maximum value
- Low strike price
- High strike price
- Maximum profit
- Break-even point
- Profit increases
- Loss decreases
- Maximum loss

Stock price decreases
Stock price increases
Long Options

The X-axis represents the price level of an underlying stock. The Y-axis represents profit and loss, above and below the X-axis intersection respectively. B.E.P. is the Break Even Point.

- **In-the-money**
- **Out-of-the-money**
Short Options

In-the-money
Out-of-the-money
Option Contracts

Assume: market price per bushel is $2.22
notional amount is 100,000 bushels
option value is $2,400

Intrinsic Value is the difference between the strike price and the market price
\( (100,000 \text{ bu} \times ($2.20 - $2.22) = $2,000) \)

Time Value is the value of the option less the intrinsic value
\( ($2,400 - $2,000 = $400) \)
Forwards

Definition:

❖ A contract to buy or sell a specified amount of an asset at a specified fixed price with delivery at a specified future point in time.

❖ Parties to forward contract typically pay nothing to enter into contract at its inception.

❖ Price of forward contract is the price that makes the values of both the long and the short zero at contract initiation.

❖ The total change in the value of the forward contract is measured as the difference between the forward rate and the asset's spot rate at the forward date.
# Differences Between Forwards and Futures Contracts

<table>
<thead>
<tr>
<th></th>
<th>Forwards</th>
<th>Futures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary market</td>
<td>Dealers</td>
<td>Organized Exchange</td>
</tr>
<tr>
<td>Secondary market</td>
<td>None</td>
<td>The Primary market</td>
</tr>
<tr>
<td>Contracts</td>
<td>Negotiated</td>
<td>Standardized</td>
</tr>
<tr>
<td>Delivery</td>
<td>Contracts Expire</td>
<td>Rare Delivery</td>
</tr>
<tr>
<td>Collateral</td>
<td>None</td>
<td>Initial Margin, Mark-to-Market</td>
</tr>
<tr>
<td>Credit risk</td>
<td>Depends on Parties</td>
<td>None [Clearing House]</td>
</tr>
<tr>
<td>Market participants</td>
<td>Large Firms</td>
<td>Wide Variety</td>
</tr>
</tbody>
</table>
Uses of Forwards and Futures

Sell forward/futures to hedge exposure to falling prices:

- Lock in profit margin on commodity inventory
- Lock in profit margin on future commodity sales/production with fixed cost structure
- Foreign currency receivables or revenue stream - sell currency forward to lock in dollar amount to be received
- In anticipation of a debt issuance, sell a US Treasury security forward to protect against rising interest rates (falling bond prices)
Uses of Forwards and Futures

**Buy** forward/futures to hedge exposure to **rising** prices:

- Raw materials used in manufacturing - lock in purchase price to protect margins
- Foreign currency payables or forecasted cash outflows - buy currency forward to lock in dollar amount paid
- Institutional investor that anticipates buying a bond or other debt instrument – buy US Treasury security forward as a hedge against falling interest rates (rising bond prices)
Forwards & Futures Illustration

Option Writer

Convey 100,000 euros in 90 days

Pay $85,000 in 90 days

Option Holder

Euros at the forward rate in 90 days..... $ 85,000
Assumed spot rate in 90 days........... 90,000
Gain in value of forward................. $ 5,000
Advantages Of Futures Over Futures To Control Risk

- Futures are easier to sell short
- Have lower transactions costs
- Have lower margin requirements which provide greater leverage opportunities
- Make longer durations achievable
  - Most bonds have maturities less than 30 years at issuance; thus, achieving long durations is difficult with bonds alone.
Swap Contracts

- An **agreement by two parties** to exchange a series of cash flows in the future.
- Typically interest rates or currencies, but may also involve commodities or equities as well.
- Very Customizable.
Interest Rate Swaps

Important Notes
- Easily, the most important and most prevalent derivative product is the plain-vanilla interest rate swap
- Entering into swap exposes you to credit risk

Types of Swaps
- Plain Vanilla
- Flavored
  - Amortizing – decreasing notional amounts
  - Accreting – increasing notional amounts
  - Seasonal – seasonally changing notional amounts
  - Roller coaster – wildly fluctuating notional amounts
  - Off-market – pay rates not at current market rates
Currency Swaps

Plain Vanilla Currency Swap

- Floating rate cash flows (usually based on LIBOR) in dollars, while the other cash flows (in another currency) are based on fixed rate.

- Entered to gain access to loanable funds in a foreign currency that might be too costly to obtain from a foreign bank.

- Differs from interest rate swaps
  - Counterparties exchange notionals on effective date and return them at maturity date.
  - Periodic interest payments are not settled on net basis.
Swap Contract Diagram

Issuer Of $10 Million Debt

Bank Counter-Party Pays a variable rate

Receives 8% fixed

Creditors Pays 8% fixed

If variable rate is 7.5%, Debtor:

- Pays to creditors......................... $ (800,000)
- Pays to bank counterparty.............. (750,000)
- Receives from bank counterparty..... 800,000
- Net interest expense...................... $ 750,000
Swaptions

The **right, but not obligation**, to enter into an interest rate swap having a predetermined fixed rate at some later date.

1. **Payer Swaption or put swaption.**
   ✴ Gives the buyer the right to be the fixed-rate payer (and floating-rate receiver) in a prespecified swap at a prespecified date.
   ✴ Buyer will exercise option if interest rates rise and pay the lower rate specified in the swap.

2. **Receiver Swaption or call swaption.**
   ✴ Gives the buyer the right to be the fixed-rate receiver (and floating-rate payer) in a prespecified swap at a prespecified date.
   ✴ Buyer will exercise option if interest rates fall and receive the higher rate specified in the swap.
Total Return Swaps

1. Requires total return receiver to pay periodic floating payments in exchange for the total return from an underlying bond or loan, including any cash flows and price changes.
   - Bears the default risk as well as other types of risks that lead to bond declining in value.
   - Benefits by gaining exposure to an asset without actually having to buy the asset.

2. Total return payer agrees to receive the floating payments and pay the total return on the underlying.
   - Benefits by removing risk but accepts a lower total return if the underlying asset does not experience default, a widening credit spread and/or downgrade.
Equity Derivatives Products

- Single stock futures are derivatives on specific stock (e.g., Cisco)
- Equity basket derivatives are futures, options or swaps where the underlying is a non-index basket of shares
- Stock market index futures are derivatives on stock exchange indices
- An equity index swap is an agreement between two parties to swap two sets of cash flows on predetermined dates for an agreed number of years
- Hybrid derivatives on equity include convertible shares such as warrants or convertible bonds
- Employee stock options are also equity derivatives
Credit Default Swap

- **Definition:** A specific kind of counterparty agreement which allows the transfer of third party risk from one party to the other.

- Credit default swaps capture the **largest volume** among credit derivatives.

- A credit default swap involves a protection buyer and a protection seller.

- The potential loss on a reference asset (e.g. bond) due to specific events such as default, credit downgrade, or bankruptcy becomes the responsibility of the protection seller.

- In return, the protection buyer pays the seller periodic or upfront fees.
Common Uses of Derivatives for Hedging

- Exposure to variability in interest rates
  - Issuance of floating rate debt
- Exposure to fluctuations in currency rates
  - Future revenue received in non functional currency (Third party of inter-company transactions)
  - Future expense incurred in non functional currency (Third party of inter-company transactions)
  - Issuance of foreign denominated debt
- Exposure to fluctuations in commodity prices
  - Future sales in which commodity value drives sales price
  - Future purchases of commodities used in business operations
FAS 133 – Derivatives Accounting
Introduction to FAS 133

FAS 133 is a complex accounting standard that can have a large financial and operational impact such as:

- Volatility in financial statements
- Significant changes in risk management strategies
- Changes in key business processes
- Changes in computer systems
- Risk management opportunities and obstacles
Introduction to FAS 133

**FAS 133** establishes accounting and reporting standards for:
- Derivative Instruments
- Hedging Activities

**FAS 133 requires all derivatives to be measured at fair value with changes in the fair value reported**
- In current earnings (MTM accounting) or
- Under Hedge Accounting guidance
Broad Objectives of FAS 133

- **Continue FAS 52** hedge accounting treatment for existing instruments and exposures

- Build on the concept of **entity-based transaction hedging**.

- **Increase the consistency** of hedge accounting treatment for all instruments.

- **Broaden the scope** of eligible foreign currency exposures and hedging instruments.
  - forecasted transactions (including inter-company transactions)
  - complex hedging instruments (collars, participating forwards)
FAS 133 Definition

A financial instrument or other contract with:

🌟 One or more underlyings (an interest rate, per-share price, fx rate, or other variable)

🌟 One or more notional amounts or payment provisions

🌟 No initial net investment (or small investment in relation to risk assumed, e.g., option premium)

🌟 Terms that permit net settlement, can readily be settled net, or provides for delivery of an asset that puts the recipient in a position not substantially different from net settlement (par. 6-9)
FAS 133 - Cornerstones

- Derivatives should be reported as assets and liabilities in the financial statements
- Derivatives should be measured at fair value; hedged items should be adjusted towards their fair value
- Only items that are assets and liabilities should be reported as such in financial statements
- Hedge Accounting is special accounting that should only be permitted for qualifying transactions
FAS 133 – Scope Exceptions

The following items are specifically excluded from the definition (and scope) of FAS 133 (par. 10):

- Loan commitments (except for mortgage loans that will be held for sale)
- Regular way securities trades (shortest period)
- Normal purchases and sales
- Certain insurance contracts:
  - Traditional life insurance contracts
  - Traditional property and casualty contracts
  - Most financial guarantee contracts
- Climatic, geological & other physical variables (trading weather derivatives are MTM under EITF 99-2)
- Generally, stock-based compensation
- Other specific exclusions
FAS 133 – Scope Exceptions

**Outside scope**
- Regular way trade
- Debt and equity investments
- Traditional insurance
- Stock comp
- Contingent purchase price

**Within scope**
- Normal sales and purchases
- Financial guarantees
- Climatic variable contracts
- Equity indexed contracts

- Interest rate swaps
- Currency swaps
- Purchased/written options
- Net settled commodity contracts
- Futures
FAS 133 – Non Qualifying Exposures

- Portfolio of dissimilar items
- Held To Maturity debt securities (interest rate)
- Future intercompany transactions
  - Forecasted (except FX)
- Items already at fair value through earnings
- Equity method/consolidated investees
- Minority interests
- Firm commitment to acquire/sell business
- Your own equity
## Derivative Financial Statement Impacts

<table>
<thead>
<tr>
<th>Management Intention</th>
<th>Balance Sheet Impact</th>
<th>Income Statement Impact</th>
<th>Impact on Comprehensive Income?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Derivatives Held for Speculation</td>
<td>The derivative (if an asset) is treated as an investment at Fair Value and FASB 115 applies. If the derivative is a liability, then it should be reported in the liability section at Fair Value.</td>
<td>Increase or decrease in the fair value of the derivative is reported in Net Income.</td>
<td>None</td>
</tr>
<tr>
<td>Fair Value Hedge</td>
<td>Derivative (as an asset or liability) is reported at Fair Value. Hedged Asset or Liability is also now carried at Fair Value.</td>
<td>Increase or decrease in the Fair Value of the derivative is reported in Net Income. The offsetting debit or credit is applied to the Fair Value of the Hedged Item.</td>
<td>None</td>
</tr>
<tr>
<td>Cash Flow Hedge</td>
<td>Derivative (as an asset or liability) is reported at Fair Value. Offset is carried in Accumulated Other Comprehensive Income until the future transaction occurs.</td>
<td>No impact on income statement until the future transaction occurs. At that time, the increase or decrease in the fair value of the cash flow hedge is reclassified into net income.</td>
<td>Yes. Current period gains and losses are reported as Other Comprehensive Income adjustments to Net Income – until the future transaction occurs – then OCI balance is reclassified into Net Income.</td>
</tr>
</tbody>
</table>
3A FAS 133 – MTM Accounting
MTM Accounting

Derivative instruments are valued at fair value with changes in fair value reported in current earnings

- All derivative products are revalued every period

Underlying hedged item is usually carried at cost or not recorded on the financial statements:

- Debt
- Held to maturity investments
- Non financial exposures such as anticipated purchases or sales
MTM Accounting

Reasons for utilizing MTM accounting

- Allows economic hedging when hedge accounting is unavailable
- Less operationally onerous than qualifying for hedge accounting
3B FAS 133 – Hedge Accounting
Three Type of Hedge Accounting

1. **Fair Value Hedge:**
   - Hedges exposures to the change in value of a
     - recognized asset or liability, or
     - unrecognized firm commitment.

2. **Cash Flow Hedge:**
   - Hedges forecasted transactions, or the variability in cash flow of a recognized asset or liability.

3. **Net Investment Hedge:**
   - Hedges the net investment in a foreign operation.
Accounting for Derivatives

- **Cash Flow Hedges**
  - Forecasted transactions
  - Floating-rate assets
  - Floating-rate liabilities

- **Net Investment Hedges**
  - FX-denominated
  - Forecasted transactions
  - (Third-party or inter-company)

- **Fair Value Hedges**
  - Fixed-rate assets
  - Fixed-rate liabilities
  - Firm commitments

- **Net investments in foreign operations**
  - FX-denominated
  - AFS securities
  - or Firm commitments

- **Net Investment Hedges** (I.E. FX Currency)
## Accounting for Derivatives

<table>
<thead>
<tr>
<th>Designation</th>
<th>Example</th>
<th>Accounting Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fair Value Hedges</strong></td>
<td>Booked receivables/payables</td>
<td>Changes in both the underlying hedged item and the hedging instrument are recognized in current period income.</td>
</tr>
<tr>
<td></td>
<td>Unrecognized firm commitments</td>
<td>Changes in both the underlying hedged item and the hedging instrument are recognized in current period income. Changes in value attributable to the hedged portion of the firm commitment require recording on the balance sheet.</td>
</tr>
<tr>
<td><strong>Cash Flow Hedges</strong></td>
<td>Forecasted transactions (including intercompany)</td>
<td>The &quot;effective portion&quot; of changes in the hedging instrument are reported in Other Comprehensive Income (OCI) and reclassified into earnings in the same period during which the hedged forecasted transaction affects earnings. Any ineffective portion is recorded in current period income.</td>
</tr>
<tr>
<td><strong>Net Investment Hedges</strong></td>
<td>Net asset position in a foreign subsidiary</td>
<td>Changes in the value of the hedging instrument are reported in the same manner as the related translation adjustment.</td>
</tr>
</tbody>
</table>

Note: Non-derivative hedging instruments (such as foreign currency borrowings) will only qualify for special accounting treatment in those circumstances already allowed under FAS 52 (e.g., existing assets and liabilities, unrecognized firm commitments, and net investment hedges).
Fair Value Hedges – Qualifying Criteria

Hedging Instrument:

- At inception, **formal** documentation of hedge relationship, risk management objective and strategy, including the risk being hedged and how effectiveness will be measured

- At inception and ongoing, relationship must be expected to be “highly effective” in achieving offset, consistent with risk management strategy

- Instruments that do not meet the definition of a derivative, e.g. Treasury notes, can not be used for hedging (some exceptions for fx hedges)

- Written options generally do not qualify for hedge accounting, except in very limited circumstances (only when hedging an embedded purchase option)
Fair Value Hedges – Qualifying Criteria

Hedged Item:

- Specifically identified portion of an asset, liability, or firm commitment

- A single asset or liability, or pool of similar assets or liabilities, or portion thereof, if all hedged items are expected to move within the same narrow range (+/- 10% is OK; +/- 30% is not)

- If hedging a financial asset or liability, can hedge the benchmark interest rate, credit risk, fx risk, or the entire change in fair value
Fair Value Hedge

- Derivatives are marked to market in earnings
- The value of the hedge will be offset in the value of the underlying exposure.

**Examples:**
- Fixed rate debt
- Fixed rate AFS security
- Inventory
- Commodity purchase firm commitment
Fair Value Hedge Mechanics

“Fair value” of the hedged item
➤ Changes in fair value recorded in income

Fair value of the hedging instrument (i.e., derivative)
➤ Changes in fair value recorded in income

Net effect?
➤ Both the derivative and the hedged item are MTM through earnings providing an offset in P&L (any ineffectiveness will be seen in the P&L)
Fair Value Hedge of Inventory Example

**Scenario:**

- ABC has 1,000 barrels of inventory in a Commodity with a fair value of $1.1 million and a carrying value of $1.0 million
- ABC wants to hedge overall fair value of the Commodity
- On 6/1/09, ABC enters into an at-the-money “matching” derivative to hedge the changes in fair value of the 1,000 barrels of the Commodity
- Effectiveness will be assessed by comparing entire change in fair value of derivative to change in market price of inventory (time value will be ignored for illustration purposes only)
- On 6/30/09, the fair value of the derivative has increased by $25,000 and the fair value of the inventory has decreased by $25,000
Fair Value Hedge Journal Entries

Accounting Entries as of 6/30/09

Derivative  
Earnings  
To record gain on derivative

Earnings  
Inventory  
To record loss on hedged inventory

Note: Gain and loss to P&L nets to $0.
Cash Flow Hedge

- Hedges exposure to variability in cash flows attributable to a particular risk of a recorded asset or liability, or a forecasted transaction.

- Derivatives are marked to market and carried at fair value.

- The effective portion of derivative’s gain/loss is reported in other comprehensive income (OCI); the ineffective portion is reported in earnings, subject to the test in paragraph 30(b).

- OCI is adjusted to reflect the lesser of the cumulative gain or loss on the derivative or the cumulative change in expected future cash flows of the hedged item.

- Earnings are impacted to the extent the hedge is not effective (for over-hedges only).
Cash Flow Hedge – Qualifying Criteria

Hedging Instrument:

- At inception, formal documentation of hedge relationship, entity’s risk management objective and strategy, including the risk being hedged and how effectiveness will be measured.

- At inception and ongoing, relationship must be expected to be “highly effective” in achieving offset consistent with risk management strategy.

- Non derivative instruments, e.g. Treasury notes, do not qualify.

- Written options generally do not qualify for hedge accounting, except in very limited circumstances (only when hedging an embedded purchase option).
Cash Flow Hedge – Qualifying Criteria

Hedged Item:

- A single transaction or series of individual transactions sharing the same exposure

- The forecasted transaction is “probable” and is a transaction with an external party (some fx hedges within an entity may qualify)

- Can hedge change in cash flows due to the benchmark interest rate, credit risk, fx risk, or entire change in cash flow
Cash Flow Hedge Mechanics

Fair value of the derivative
- Changes recorded in OCI for effective portion
- Changes recorded in earnings for ineffective portion

No basis adjustment to the hedged asset or liability

Net effect?
- Amounts in OCI recognized when the hedged item impacts earnings
Cash Flow Hedge

*Examples:*

- Floating rate debt
- Floating rate AFS security
- Forecasted commodity purchase
- Planned debt issuance
Cash Flow Hedge of Forecasted Inventory Sale

Assumptions:

- 100,000 barrels of Commodity A to be sold at the end of period 1. The inventory carrying value is $1 million, and current market value is $1.1 million
- On the first day of period 1, ABC enters into Derivative Z to sell 100,000 barrels at $1.1 million at the end of period
- At hedge inception, the derivative is at-the-money (fair value is 0)
- All terms of the commodity and the derivative match (i.e., no expected ineffectiveness)
- On last day of Period 1, fair value of Derivative Z increased by $25,000 and expected sales price of 100,000 barrels of Commodity A decreased $25,000
Cash Flow Hedge Journal Entries – Period 1

Accounting Entries at end of period 1.

Derivative Z 25,000

OCI 25,000

To record Derivative Z at fair value

Cash 25,000

Derivative Z 25,000

To record settlement of Derivative Z
Cash Flow Hedge Journal Entries – Period 1

Accounting Entries at end of period 1.

Journal entries at end of period 1

<table>
<thead>
<tr>
<th>Account</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>1,075,000</td>
</tr>
<tr>
<td>CGS</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Revenue</td>
<td>1,075,000</td>
</tr>
<tr>
<td>Inventory</td>
<td>1,000,000</td>
</tr>
</tbody>
</table>

To record inventory sale

<table>
<thead>
<tr>
<th>Account</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCI</td>
<td>25,000</td>
</tr>
<tr>
<td>Earnings</td>
<td>25,000</td>
</tr>
</tbody>
</table>

To reclassify amount in OCI to earnings upon inventory sale
Cash Flow Hedge Journal Entries – Period 1

Forecasted cash flows: $1,100,000

Actual cash flows:
- Derivative $25,000
- Sale of inventory $1,075,000
- Total $1,100,000

The variability of cash flows related to the forecasted inventory sale is offset by change in value of derivative.
Net Investment Hedge

- The gain or loss is reported in OCI (other comprehensive income) as part of the cumulative translation adjustment.

- The accounting for a fair value hedge applies to a derivative designated as a hedge of the foreign currency exposure of an unrecognized firm commitment or an available-for-sale security.

- Similarly, the accounting for a cash flow hedge described above applies to a derivative designated as a hedge of the foreign currency exposure of a foreign-currency-denominated forecasted transaction.
Three Types of Net Investment Hedges

**Fair value hedge**
- Firm commitments, AFS securities and fx-denominated assets and liabilities that give rise to transaction gains or losses under Statement 52

**Cash flow hedge**
- Firm commitments, forecasted transactions and fx-denominated assets and liabilities that give rise to transaction gains or losses under Statement 52

**Hedge of a net investment in a foreign operation**
- I.e., cumulative translation adjustment
FX Assets and Liabilities

Many Hedges of FX assets and liabilities do not need to be “hedged” under FAS 133

- Asset or liability is remeasured at spot rate thru earnings, per FAS 52
- Derivative that hedges an FX asset or liability is carried at fair value also with changes thru earnings
- Substantial offset achieved, with minor mismatch due to differences in spot and forward rates

No need for “special” hedge accounting treatment, because both sides are marked through P&L
## Types of Currency Swap Hedges
*(Hedges of interest-bearing FX denominated debt)*

<table>
<thead>
<tr>
<th>Client’s Debt and Swap Flows</th>
<th>Converted to USD Fixed</th>
<th>Converted to USD Floating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign Fixed Rate Debt</td>
<td>Cash Flow</td>
<td>Fair Value</td>
</tr>
<tr>
<td>Foreign Floating Rate Debt</td>
<td>Cash Flow</td>
<td>Non-Hedge*</td>
</tr>
</tbody>
</table>

* *Substantial earnings offset achieved without hedge accounting*
Determining Hedge Effectiveness

**Effectiveness**

Is defined as the ability of the hedging instrument to offset changes in the fair value or cash flows of the underlying hedged item.

An entity may choose to exclude all or part of the hedging instrument’s time value.

If the hedge fails the effectiveness test at any time during the period,

- The hedge ceases to qualify for hedge accounting treatment
- Any accumulated gain/loss related to the hedging instrument must be reported immediately in earnings.
Determining Hedge Effectiveness

If **critical terms** of the hedging instrument and the hedged item are the same, the entity can assume that the hedge will be completely effective.

All terms must be documented at inception (notional/principal amounts, exchange rates, repricing dates, maturity dates).

If **critical terms** are not the same, the entity must specify the method it will use for assessing hedge effectiveness and the measurement approach for determining the ineffective portion of the hedge.

This assessment must be done whenever financial reports are issued, but not less than every three months.
Determining Hedge Effectiveness

*Forward Contracts*: when effectiveness is assessed based on changes in spot rates, the forward discount/premium (based on interest rate points) would be excluded from the effectiveness test.

*Options*: when effectiveness is assessed based on changes in intrinsic value, changes in time value would be excluded from the effectiveness test.

In both cases, changes in the excluded component would be included in current period earnings.
Financial Statement Implications

More derivatives under new definitions
- Commodity contracts not considered to be “normal”
- Embedded derivatives

Derivatives that don’t meet hedge criteria will be marked to fair value currently through earnings

All ineffectiveness will be recorded in earnings currently

All derivatives will be carried on the balance sheet at fair value

Some hedged items will be carried at fair value or “partial” fair value
Conclusion to FAS 133

- **Derivatives** should be reported in financial statements
- **Fair (market) value** is the most relevant measure of value
- **Only assets & liabilities** should be reported as such. Income & expenses should be reported on the income statement
- **Special accounting rules** should be limited to qualifying hedge transactions
Embedded Derivatives (FAS 155)
Embedded Derivatives - Definition

- A derivative within another contract (Host Contract) that is not a derivative
- In certain circumstances, FAS 133 requires embedded derivatives to be bifurcated (separated) from the host contract and accounted for separately
  - Embedded features in a host contract will not have to be bifurcated and accounted for separately from the host if they are “clearly & closely related” to the host
- If the entire hybrid instrument is carried at fair value with changes in fair value included in earnings, FAS 133 does not require separate accounting for the embedded derivative
Embedded Derivative Decision Tree

Is hybrid marked to fair value through earnings?

No → Is the embedded a stand-alone derivative?

Yes → Is it clearly and closely related?

No → Apply Statement 133

Yes → Do Not Apply FAS 133 (Embedded not split out)
Example of Embedded Derivatives
Characteristics of potential embedded derivatives that are often overlooked:

- Renewal, extension, cancellation, and prepayment options in debt arrangements (e.g. option to put debt with no premium paid or additional rate charged)
- Contracts that can be settled through multiple means (e.g., physical, stock or cash)
- Transactions and contracts (e.g., forward purchase and sale contracts) denominated in or referenced to a foreign currency that is not characteristic of either party to the transaction
- Investments in convertible, exchangeable, or indexed debt
- “If…then” provisions within contracts (e.g., a payment provision within a contract that requires additional payment if a particular index, such as an interest rate, equity, foreign currency index, moves above a predetermined cap or floor)
5 Fair Value Option (FAS 159)
FAS 159 – Fair Value Option

- Permits entities to elect to measure eligible items at fair value
- May be applied instrument by instrument, with certain exceptions
- Election is irrevocable
- May not be applied to portions of instruments

NOTE: This pronouncement allows companies to elect fair value option on financial instruments, the and report the changed in earnings in lieu of applying hedge accounting.
FAS 159 – Required B/S Disclosures

- Must separately report items measured at fair value
- Reasons for electing fair value
- Reasons for not electing fair value for similar items
- For each line item on the balance sheet that includes fair value items:
  - Information to show how the line item relates to FAS 157 and 107 disclosures
  - The aggregate carrying amount of items included in the line item ineligible for the fair value option
- The difference between the aggregate fair value and aggregate unpaid principal balance of:
  - Loans and long-term receivables (except FAS 115 securities) for which the option has been elected
  - Long-term debt instruments for which the fair value option has been elected
- Certain additional information for instruments that would have been reported under the equity method and loans that are 90 days or more past due
FAS 159 – Required I/S Disclosures

- Gains and losses from changes in fair value included in earnings
- Description of how dividends and interest are measured and where they are reported
- For loans and other receivables – gains and losses arising from changes in instrument specific credit risk and how the credit risk gains and losses were determined
- For liabilities with fair values that changed significantly – gains and losses arising from changes in instrument specific credit risk, qualitative information about the reasons for the changes, and how the credit risk gains and losses were determined
FAS 159 – Eligible Items

- Financial assets and financial liabilities
- A firm commitment involving only financial instruments (e.g. best efforts forward sales contract)
- Written loan commitments
- Insurance contracts, warranty agreements and host financial instruments resulting from the separation of a nonfinancial derivative from a nonfinancial hybrid instrument
FAS 159 – Ineligible Items

- Consolidated investments in subsidiaries
- Consolidated interests in variable interest entity
- Employers’ and plans’ obligations for employee benefit obligations, employees stock options and other deferred benefit compensation arrangements
- Financial assets and liabilities recognized under leases
- Deposit liabilities, withdrawable on demand
- Financial assets classified under shareholder’s equity
Fair Value Measurement (FAS 157)
FAS 157 Key Terms

**Fair Value:** The price that would be received to sell an asset or transfer a liability in an orderly transaction between market participants at the measurement date (exit price).

**Asset or Liability:** The measurement is for a particular asset or liability.

**Orderly transaction:** A transaction that assumes exposure to the market for a period prior to the measurement date to allow for marketing activities that are usual and customary for transactions involving such assets and liabilities; it is not a forced transaction.

**Market participants:** Buyers and sellers in the principal (or most advantageous) market

**NOTE:** This pronouncement applies under other accounting pronouncements that require or permit fair value measurements (FAS133, FAS159, etc) and more clearly defines fair value measurement and hierarchy of measurement.
Valuation Techniques

- **Market Approach**: Quoted prices in active markets for identical or comparable assets or liabilities
  - Can include matrix pricing

- **Income Approach**: Techniques to convert future amounts to a single present amount.
  - Can include present value, option-pricing, and multi-period excess earnings

- **Cost**: replacement cost – does not apply to financial assets and liabilities
FAS 157 Fair Value Hierarchy

**Level 1:** Quoted prices in active markets for identical assets or liabilities
- Most reliable measure and should be used whenever possible

**Level 2:** Observable inputs other than quoted prices
- Quoted prices for similar assets or liabilities in active markets.
- Quoted prices in markets that are not active (e.g. few transactions, prices not current, price quotations vary, little public information, etc.)
- Observable inputs such as interest rates and yield curves observable at commonly quoted intervals, volatilities, prepayment speeds, credit risks, default rates, etc.
- Market-corroborated inputs

**Level 3:** Unobservable inputs
FAS 157 Significant Changes

- Use of an exit price versus an entry price.
- Transaction costs are expensed if initial measurement is at fair value.
- Entity’s own credit risk must be considered when measuring the fair value of liabilities – nonperformance risk.
- Fair value of a block of financial instruments traded in an active market is “price X quantity”. No block adjustments.
FAS 157 – Required Disclosures

✦ The fair value at the reporting date
✦ The level within the fair value hierarchy
✦ For level 3 items, a reconciliation of beginning and ending balances attributable to the following:
  ▪ Total gains or losses for the period (realized and unrealized) segregating those gains and losses included in earnings, and a description of where they are reported in the income statement
  ▪ Purchases, sales, issuances and settlements (net)
  ▪ Transfers in or out of Level 3
✦ The amount of gains and losses from level 3 items that are still held and where they are reported on the income statement
✦ Valuation techniques used and discussion of changes if any
## FAS 157 Disclosure Example

<table>
<thead>
<tr>
<th></th>
<th>March 31, 2009</th>
<th></th>
<th>December 31, 2008</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fair Value Measurements</td>
<td>Total</td>
<td>Level 1</td>
<td>Level 2</td>
</tr>
<tr>
<td><strong>PPL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Assets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>$631</td>
<td>$631</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short-term investments</td>
<td>150</td>
<td>150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restricted cash and cash equivalents</td>
<td>190</td>
<td>190</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price risk management assets:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy commodities</td>
<td>3,640</td>
<td>14</td>
<td>$3,456</td>
<td>$170</td>
</tr>
<tr>
<td>Interest rate/foreign exchange</td>
<td>164</td>
<td></td>
<td>119</td>
<td>45</td>
</tr>
<tr>
<td>Nuclear plant decommissioning trust funds:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equity securities</td>
<td>179</td>
<td>179</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commingled equity index funds</td>
<td>76</td>
<td>76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debt securities:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. Treasury</td>
<td>59</td>
<td>59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Municipality</td>
<td>63</td>
<td>63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corporate</td>
<td>28</td>
<td>28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>14</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auction rate securities</td>
<td>425</td>
<td>244</td>
<td>181</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Liabilities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price risk management liabilities:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy commodities</td>
<td>$2,949</td>
<td>$8</td>
<td>$2,887</td>
<td>$54</td>
</tr>
<tr>
<td>Interest rate/foreign exchange</td>
<td>18</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$2,967</td>
<td>$8</td>
<td>$2,905</td>
<td>$54</td>
</tr>
</tbody>
</table>
### FAS 157 Disclosure Example

<table>
<thead>
<tr>
<th></th>
<th>Energy Commodities, net</th>
<th>Interest Rate/Foreign Exchange</th>
<th>Auction Rate Securities</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PPL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance at December 31, 2008</td>
<td>$138</td>
<td>$4</td>
<td>$24</td>
<td>$216</td>
</tr>
<tr>
<td>Total realized/unrealized gains (losses):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Included in earnings</td>
<td>(21)</td>
<td></td>
<td></td>
<td>(21)</td>
</tr>
<tr>
<td>Included in OCI</td>
<td>(10)</td>
<td>3</td>
<td>(2)</td>
<td>(9)</td>
</tr>
<tr>
<td>Purchases, sales, issuances and settlements, net</td>
<td>36</td>
<td></td>
<td></td>
<td>36</td>
</tr>
<tr>
<td>Transfers (out of) and/or into Level 3</td>
<td>(77)</td>
<td>38</td>
<td></td>
<td>(39)</td>
</tr>
<tr>
<td>Balance at March 31, 2009</td>
<td>$116</td>
<td>$45</td>
<td>$22</td>
<td>$183</td>
</tr>
</tbody>
</table>
Differences between FAS 133 & IAS 39
## FAS 133 vs. IAS 39 Differences

<table>
<thead>
<tr>
<th>Topic</th>
<th>IFRS</th>
<th>US GAAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition of a derivative: notional amount or payment provision</td>
<td>No requirement to have a notional amount or payment provision, but in practice this usually exists</td>
<td>Financial instrument or other contract must have one or more notional amounts, payment provision or both</td>
</tr>
<tr>
<td>Definition of a derivative: net settlement versus settlement at a future date</td>
<td>No net settlement characteristic requirement, however contracts to purchase, sell or use non-financial items are only accounted for as derivatives if they can be settled net in cash or with another financial instrument. IFRS includes a settlement at a future date characteristic.</td>
<td>Financial instrument or other contract must require or permit net settlement, be readily settled net by a means outside the contract, or provide for delivery of an asset that put the recipient in a position not substantially different from net settlement.</td>
</tr>
</tbody>
</table>
| Derivative scope exception: normal purchases and normal sales versus own use contracts | - No documentation is required  
- Written options are not eligible if non-financial item is readily convertible to cash  
- Embedded derivatives do not disqualify an entity from applying own use exception | - Must have documentation  
- Certain written options are eligible  
- Embedded derivatives that are not clearly and closely related disqualify an entity from applying normal purchases and normal sales exceptions |
## FAS 133 vs. IAS 39 Differences

<table>
<thead>
<tr>
<th>Topic</th>
<th>IFRS</th>
<th>US GAAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Derivative scope exception: certain contracts not traded on an exchange; underlying is based on a climatic or geological variable or some other physical barrier</td>
<td>When such contracts do not meet the definition of an insurance contract (i.e. they are not within scope of IFRS 4 Insurance Contracts), they are within scope of IAS 39 and are accounted for as derivatives</td>
<td>Out of scope</td>
</tr>
<tr>
<td>Derivative scope exception: certain contracts not traded on an exchange; underlying is based on specified volumes of sales or service revenues</td>
<td>Contracts with an underlying based on specified volumes of sales or services revenues may meet definition of a derivative; however royalty agreements based on the volume of sales or service revenues are accounted for under IAS 18, and would not be accounted for as derivatives</td>
<td>Out of scope</td>
</tr>
<tr>
<td>Derivative scope exception: certain contracts whose underlying is a non-marketable equity security</td>
<td>Accounted for as derivatives unless the entity cannot readily measure the instrument’s fair value</td>
<td>Usually do not meet the net settlement characteristics in the definition of a derivative</td>
</tr>
</tbody>
</table>
### FAS 133 vs. IAS 39 Differences

<table>
<thead>
<tr>
<th>Topic</th>
<th>IFRS</th>
<th>US GAAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Embedded derivative: clearly and closely related</td>
<td>Similar to US GAAP; However detailed application differences include: - Puts, calls and prepayment options - Embedded derivatives in purchase, sale and service contracts - Insurance contracts - Caps and floors on interest rates - Foreign currency features</td>
<td>Condition for separating an embedded derivative is that its economic characteristics and risks are not clearly and closely related to those of the host contract</td>
</tr>
<tr>
<td>Reassessment of embedded derivative status</td>
<td>Entities are not permitted to reassess whether an embedded derivative is required to be separated unless there is a change in the terms that significantly modifies the cash flows</td>
<td>Typically, entities reassess whether an embedded feature is required to be separated as least at the end of each reporting period</td>
</tr>
<tr>
<td>Presentation of embedded derivatives (combined with the host or separate)</td>
<td>Explicitly states that it does not address whether an embedded derivative should be presented separately in the financial statements</td>
<td>Does not explicitly address presentation of derivatives under FAS 133. Addressed in FAS 161 disclosures guidance.</td>
</tr>
</tbody>
</table>
## FAS 133 vs. IAS 39 Differences

<table>
<thead>
<tr>
<th>Topic</th>
<th>IFRS</th>
<th>US GAAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option to designate any financial asset or liability to be measured at fair value throughout profit or loss</td>
<td>Option allowed if one of three criteria are met</td>
<td>Option allowed at initial recognition. Criteria in IFRS does not apply</td>
</tr>
<tr>
<td>Scope of items eligible for option to designate any financial asset or liability to be measured at fair value throughout profit or loss (Fair value option – FVO)</td>
<td>Prohibits election of FVO for certain contracts and warrants that are not financial instruments; precludes application to an investment in an equity instrument with no quoted market price and with limited exception excludes investments in equity method investments</td>
<td>Except for existence of qualifying criteria above and prohibited items noted the scope of items which FVO can be applied is similar</td>
</tr>
<tr>
<td>Date of election to designate any financial asset or liability to be measured at fair value through profit or loss</td>
<td>Election only at initial recognition</td>
<td>Election at initial recognition as well as certain subsequent dates</td>
</tr>
<tr>
<td>Definition of fair value: principal (or most advantageous) market</td>
<td>Does not define fair value in terms of the principal market. For financial instruments traded in active markets, the most advantageous active market in which the entity has access. No principal market concept.</td>
<td>Explicitly requires reporting entity to measure fair value assuming the transaction occurs in the principal market (or most advantageous market if no principal market) for the asset or liability.</td>
</tr>
</tbody>
</table>
## FAS 133 vs. IAS 39 Differences

<table>
<thead>
<tr>
<th>Topic</th>
<th>IFRS</th>
<th>US GAAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fair value at initial recognition (inception)</td>
<td>Entry price is presumptively fair value, unless fair value is evidenced by other observable market transactions or a valuation technique that only includes observable inputs.</td>
<td>Exit price, but provides examples when transaction price might not represent fair value.</td>
</tr>
</tbody>
</table>
| Valuation techniques          | - Detailed guidance on inputs to valuation technique  
- Permits carryforward of measurement assumptions to subsequent measures  
- Does not permit mid-market pricing, unless offsetting positions. Assumes bid price for assets and ask price for liabilities | - Detailed guidance on three acceptable valuation approaches  
- Does not permit carryforward measurement assumptions to subsequent measurements  
- Permits mid-market pricing as practical expedient |
| Fair value disclosures        | - No fair value hierarchy disclosures  
- No separate disclosure of recurring and non-recurring fair value measures  
- Required disclosures about sensitivity to unobservable assumptions and inception gains and losses | - Fair value hierarchy disclosures  
- Separate disclosure of recurring and non-recurring fair value measurement  
- No required disclosures about sensitivity to unobservable assumptions or inception gains and losses |
8 Reporting & Disclosure
FAS 161 Objectives

- Intended to enhance the current disclosure framework in FAS 133
- Requires that objectives for using derivative instruments be disclosed in terms of underlying risk and accounting designation
- Better conveys the purpose of derivative use in terms of the risks that the entity is intending to manage
- Discloses fair values of derivative instruments and their gains and losses in a tabular format
- Discloses information about credit-risk-related contingent features
- Requires cross-referencing within the footnotes
Disclosure Requirements

- Required disclosures can be divided into four types:
  - Qualitative disclosures
  - Quantitative disclosures
  - Disclosures relating to OCI and AOCI
  - U.S. SEC Risk Disclosure Requirements

- The Standard requires general derivative disclosures and specific hedge disclosures for cash flow hedges, fair value hedges and hedges of a net investment in a foreign operation
Qualitative Disclosure Requirements

For all derivative instruments the entity shall disclose

- Objectives for holding derivatives
- Context needed to understand those objectives
- Entity’s risk management policy
- Description of the items or transactions that are being hedged
- Disclosures should help users understand the volume of derivative activity (format not prescribed)
Quantitative Disclosure Requirements

✦ Fair Value Hedges
  - Net gain or loss recognized in earnings during the reporting period from hedge ineffectiveness
  - Component of the derivatives gain or loss excluded from the assessment of hedge effectiveness
  - Where the net gain or loss is reported
  - The amount of net gain or loss recognized in earnings when a hedged firm commitment no longer qualifies as a fair value hedge
Quantitative Disclosure Requirements

Cash Flow Hedges

- Net gain or loss recognized in earnings during the reporting period from hedge ineffectiveness

- Component of the derivative’s gain or loss excluded from the assessment of hedge effectiveness

- Where the net gain or loss is reported

- Description of transactions or other events that will result in reclassification of gains and losses reported in accumulated OCI into earnings and net amount expected within next 12 months

- Maximum length of time entity is hedging the variability in cash flows of a forecasted transaction

- Gains and losses reclassified into earnings from discontinuance of cash flow hedges because it is probable that the forecasted transaction will not occur
Quantitative Disclosure Requirements

- Hedges of a net investment in a foreign operation
  - For a hedge of a net investment in a foreign operation, entities must disclose the net amount of gains or losses included in the cumulative translation adjustment during the reporting period.
OCI & AOCI Disclosure Requirements

- Required to display as a separate classification within Other Comprehensive Income the net gain or loss on derivative instruments designated and qualifying as cash flow hedging instruments.

- As part of disclosures of AOCI, separately disclose the beginning and ending accumulated derivative gain or loss, the related net change, and the net amount of reclassification into earnings.
Credit Risk Disclosure Requirements

- Disclose existence and nature of
  - Credit risk related contingent features and the circumstances that would trigger the provisions (if derivative is in a net liability position)
  - The aggregate fair value of derivatives with such features that are in a liability position
  - Aggregate FV of collateral and amount of additional assets that could be needed to settle the instrument
### Disclosure Example

<table>
<thead>
<tr>
<th>Derivatives designated as hedging instruments</th>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance Sheet Location</td>
<td>Fair Value</td>
<td>Balance Sheet Location</td>
</tr>
<tr>
<td>Interest rate swaps</td>
<td>Price Risk Management Assets - current</td>
<td>$13</td>
</tr>
<tr>
<td></td>
<td>Price Risk Management Assets - non-current</td>
<td>43</td>
</tr>
<tr>
<td>Cross-currency swaps contracts</td>
<td>Price Risk Management Assets - current</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Price Risk Management Assets - non-current</td>
<td>69</td>
</tr>
<tr>
<td>Foreign exchange contracts</td>
<td>Price Risk Management Assets - current</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Price Risk Management Assets - non-current</td>
<td>16</td>
</tr>
<tr>
<td>Commodity contracts</td>
<td>Price Risk Management Assets - current</td>
<td>309</td>
</tr>
<tr>
<td></td>
<td>Price Risk Management Assets - non-current</td>
<td>919</td>
</tr>
<tr>
<td><strong>Total derivatives designated as hedging instruments</strong></td>
<td></td>
<td>1,392</td>
</tr>
<tr>
<td>Derivatives not designated as hedging instruments (a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance Sheet Location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commodity contracts</td>
<td>Price Risk Management Assets - current</td>
<td>1,473</td>
</tr>
<tr>
<td></td>
<td>Price Risk Management Assets - non-current</td>
<td>939</td>
</tr>
<tr>
<td><strong>Total derivatives not designated as hedging instruments</strong></td>
<td></td>
<td>2,412</td>
</tr>
<tr>
<td><strong>Total derivatives</strong></td>
<td>$3,804</td>
<td></td>
</tr>
</tbody>
</table>
## Disclosure Example

<table>
<thead>
<tr>
<th>Derivatives in Fair Value Hedging Relationships</th>
<th>Amount of Gain (Loss) Recognized in OCI on Derivative (Effective Portion)</th>
<th>Location of Gain (Loss) Reclassified from AOCI into Income (Effective Portion)</th>
<th>Location of Gain (Loss) Recognized in Income on Derivative (Effective Portion) and Amount Excluded from Effectiveness Testing</th>
<th>Amount of Gain (Loss) Reclassified from AOCI into Income (Effective Portion) and Amount Excluded from Effectiveness Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest rate swaps</td>
<td>$10,000</td>
<td>$10,000</td>
<td>$10,000</td>
<td>$10,000</td>
</tr>
<tr>
<td>Cross-currency swaps</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$5,000</td>
</tr>
<tr>
<td>Commodity contracts</td>
<td>$276</td>
<td>$276</td>
<td>$276</td>
<td>$276</td>
</tr>
<tr>
<td>Total</td>
<td>$305</td>
<td>$305</td>
<td>$305</td>
<td>$305</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Derivatives in Net Investment Hedging Relationships</th>
<th>Amount of Gain (Loss) Recognized in OCI on Derivative (Effective Portion)</th>
<th>Location of Gain (Loss) Reclassified from AOCI into Income (Effective Portion)</th>
<th>Location of Gain (Loss) Recognized in Income on Derivative (Ineffective Portion and Amount Excluded from Effectiveness Testing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign exchange contracts</td>
<td>$1</td>
<td>$1</td>
<td>$1</td>
</tr>
</tbody>
</table>
## Disclosure Example

<table>
<thead>
<tr>
<th>Derivatives in Cash Flow Hedging Relationships</th>
<th>Amount of Gain (Loss) Recognized in OCI on Derivative (Effective Portion)</th>
<th>Location of Gain (Loss) Reclassified from AOCI into Income (Effective Portion)</th>
<th>Amount of Gain (Loss) Reclassified from AOCI into Income</th>
<th>Location of Gain (Loss) Recognized in Income on Derivative (Ineffective Portion and Amount Excluded from Effectiveness Testing)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Cross-currency swaps</td>
<td>$ 10</td>
<td>Interest expense $ 1</td>
<td>Other income $ 22</td>
<td>Interest expense</td>
<td>Other income</td>
</tr>
<tr>
<td>Commodity contracts</td>
<td>276</td>
<td>Wholesale energy marketing $ 166</td>
<td>Fuel $ 1</td>
<td>Wholesale energy marketing $ 29</td>
<td>Fuel $ 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Energy purchases $ (103)</td>
<td></td>
<td>Energy purchases $ (3)</td>
<td></td>
</tr>
<tr>
<td>Total commodity</td>
<td>276</td>
<td>64</td>
<td>27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$ 286</td>
<td>$ 87</td>
<td>$ 27</td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<tbody>
<tr>
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<td>$ 1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Operational Challenges
Main Operational Challenges

- Resources knowledgeable of accounting for derivative standards
- Appropriate risk management strategies for managing financial and operational exposures
- Contemporaneous documentation requirements
- Operational process to perform effectiveness assessment and measurement
- Reliable and controlled method to value derivatives and exposures
- Time required to stay on top of continually changing accounting guidance
- Capability to provide accurate and meaningful management reporting
Common Reasons for Restatements

- Hedge documentation deficiencies
- Misapplication of the short-cut method
- Misapplication of the critical terms match approach
- Issues involved with identification of free-standing and embedded derivatives
- Valuation problems
Documentation Requirements

Formal documentation at inception of the hedge must specify the hedging relationship and the entity’s risk management objective and strategy.

This will include a description of:

- The risk to be hedged (ie. FX denominated transactions).
- Expected currency amounts and timing.
- The hedging instrument.
- How the hedging instrument will be effective at offsetting the variability in the hedged transaction.
FAS 133 Documentation

Documentation Should Also Include:

- The general context needed to understand the objectives for entering into derivatives
- A description of how amounts accumulated in OCI will be reclassified into earnings
- The expected market price of the forecasted item at the inception of the net investment hedge
- Data that suggests forecasted exposures are probable