Learning Module 3: Derivative Benefits, Risks, and Issuer and Investor Uses

LOS 3a: describe the benefits and risks of derivative instruments

Benefits

1. Risk Allocation, Transfer, and Management

Derivative instruments allow allocation, transfer, and management of risks without trading an underlying. The information on cash or spot market prices for financial instruments, goods, and services may assist an investor or issuer in buying and selling. However, issuers and investors are affected by the timing difference between the economic decision and the ability to transact in a cash market.

The ability to buy or sell a derivative instrument today at a pre-agreed price reduces the time between the economic decision and transacting in price risk under different scenarios. For instance, forward commitments or contingent claims can allocate or transfer risk across time and among investors willing to assume those exposures.

2. Information Discovery

Derivative instrument prices provide a price discovery function outside cash or spot markets. More specifically, futures prices may give information about future cash market movement. For instance:

- Analyzing equity index futures prices before the stock market’s opening may indicate the direction of cash market prices in early trading.
- Analysts often use the interest rate futures market to predict expectations of the central bank’s benchmark interest rate movement.
- Prices for commodity futures serve as a proxy for supply and demand patterns among producers, consumers, and investors across maturities.

Options prices mirror underlying features such as implied volatility, which measures the expected price risk of the underlying.

3. Operational Advantages Compared to Cash or Spot Markets

The operational benefits of derivatives that differentiate them from the cash or spot market include the following:

- **Lower transaction costs**: Derivatives remove the need for insurance, transportation, and storage costs before taking a short position in an underlying.
- **High liquidity**: Derivative markets are associated with reduced capital needed to trade derivatives as compared to a position in cash position in the underlying.
- **Low upfront cash requirements**: Derivatives are associated with low initial margins and premiums compared to cash market transaction costs.
- **Ability to take short positions** with low associated costs.

4. Market Efficiency

Operational efficiency of derivative markets natures greater market efficiency. Derivative markets offer an effective way to exploit mispricing (deviation of prices from the fundamental value). Consequently, fundamental values are frequently reflected earlier in the derivative market than in the cash market. As such, derivative markets lead to more efficient financial markets.

Risks of Derivative Instruments

Derivative instruments and positions are complex. As a result, there are potential risks associated with their usage. These include:

i. High Potential for Speculative Use

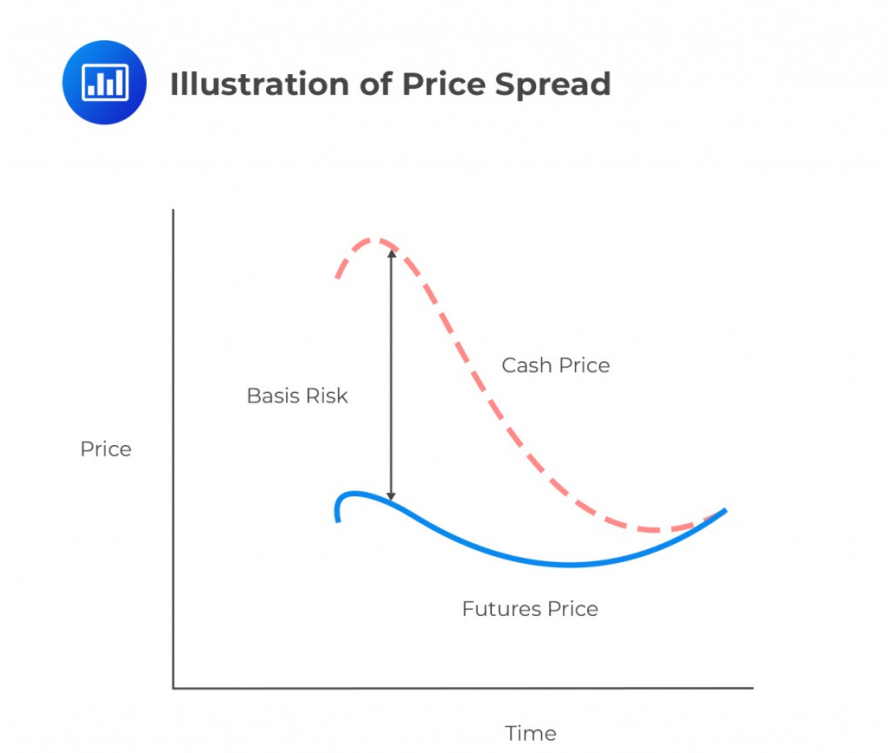
High operational efficiency in derivative instruments limits an investor's initial cash outlay. Consequently, this feature attracts a high degree of implicit leverage compared to cash or spot markets. A high degree of leverage may increase the chances of financial distress.

ii. Lack of Transparency

Derivatives are used to create exposures not found in cash or spot markets. This results in greater portfolio complexity and risks unknown to the investors.

iii. Basis Risk

Basis risk occurs when the expected value of a derivative instrument suddenly deviates from that of the underlying or hedged transaction. Basis risk may manifest when a derivative instrument references a price of an index that is similar but does not precisely match the underlying exposure.



iv. Liquidity Risk

Liquidity risk arises when the cash flow timing of a derivative differs from that of the underlying transaction. For instance, if an investor or issuer fails to honor the margin call requirements, its position is closed out.

v. Counterparty Credit Risk

Counterparty credit risk is the risk of one or more parties in a financial transaction failing to fulfill their side of the contractual agreement. Derivative instruments are associated with counterparty credit exposure leading to differences in the current price compared with the expected future settlement price. However, counterparty credit risk varies with derivatives instrument types and markets in which they are traded.

For example, counterparty credit risk is prevalent in over-the-counter (OTC) markets since credit terms are privately negotiated between counterparties. On the other hand, exchange-traded derivatives are associated with low counterparty risk due to the mark-to-market (MTM) process and margining procedures.

vi. Destabilization and Systemic Risk

Systemic risk occurs due to extensive risk-taking and the use of leverage in derivative markets (which may lead to market stress). As such, financial market supervisory has increased, with a heightened focus on the effect of financial innovation and financial conditions necessary for market stability.

Question 1

Which of the following *best* describes basis risk? The risk that:

A. cash flow timing of a derivative instrument differs from that of an underlying transaction.

B. the expected value of the derivative deviates unexpectedly from that of the underlying.

C. arise due to imprudent risk-taking and utilization of leverage that play a part in market stress.

Solution

The correct answer is B.

Basis risk occurs when the **expected value** of a derivative instrument suddenly deviates from that of the **underlying or hedged transaction**.

A is incorrect. It describes liquidity risk.

C is incorrect. It describes the systemic risk.

LOS 3b: compare the use of derivatives among issuers and investors

Financial intermediaries, investors, and issuers use derivative products to increase, reduce, or alter their exposure to an underlying to achieve their financial goals. With the development of derivatives accounting, these instruments are now reported on the balance sheet at their fair market value instead of using off-balance-sheet reporting.

Use of Derivatives among Issuers

Issuers use derivatives to primarily hedge market-based underlying exposures. Issuers often use hedge accounting, which allows them to offset a hedging instrument – such as derivatives – against a hedged transaction or balance sheet item to decrease financial statement volatility.

In other words, hedge accounting allows issuers to recognize derivative gains, losses, and associated underlying hedged transactions. According to derivative accounting standards, any derivative bought or sold must be marked to market via the income statement through earnings unless it is embedded in an asset or liability or qualifies for hedge accounting.

Types of Hedge Accounting

1. Cash Flow Hedges

Cash flow hedges absorb **variable cash flow** of floating-rate assets or liabilities such as interest rates and foreign exchanges. Cash flow hedges use either forward commitments or contingent claims. For example, a currency forward contract to hedge estimated future sales.

2. Fair Value Hedge

A fair value hedge occurs when a derivative is used to **offset** fluctuation in the **fair value** of an asset or liability. For example, commodities futures may be used to hedge an inventory.

3. Net Investment Hedges

Net investment hedges arise when a **foreign currency bond** or a **derivative** such as forward is used to **offset** the **exchange rate risk** of equity of a foreign operation. Using a currency forward, in this case, could be an effective way to offset foreign exchange risk associated with equity in a foreign company.

Use of Derivatives among Investors

Investors use derivatives to:

i. Replicate a Cash Market Strategy

A derivative market has greater liquidity and reduced capital requirements to trade. This feature allows investors to replicate a chosen position using derivatives easily.

ii. Perform Derivative Hedges

Derivative hedges allow an investor to isolate specific underlying exposures while retaining other positions.

iii. Add or Modify Exposures

Derivative markets are associated with the flexibility to take positions. As such, an investor can use a derivative to add or modify an exposure beyond cash market alternatives.

Note that investors are less concerned about hedge accounting treatment than issuers. This is because an investment fund’s position is usually marked to market daily and included in the daily net asset value (NAV) of the portfolio or fund. This explains why investors transact more frequently in exchange-traded derivatives markets than issuers.

Question

Derivatives intended to withstand a company’s fluctuating cash flows are *most likely* referred to as:

A. cash flow hedges.

B. fair value hedges.

C. new investment hedges.

Solution

The correct answer is **A**.

Cash flow hedges are derivatives intended to withstand a company’s fluctuating cash flows.

Fair value hedges are derivatives considered to balance off the variation in the fair value of an asset or liability.

Net investment hedges happen when a derivative is used to offset the exchange rate risk of the equity of a foreign operation.