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Derivatives 101

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Derivatives Strategies - “Hedging”

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Executive Summary

- The first two issues of our **Derivatives 101** series gave a brief overview of **derivatives instruments** and the **derivatives trading process**.
- This issue gives an in-depth explanation of hedging as a strategy that can be used to manage risks in asset management.
- We use an example to demonstrate how futures can be used to hedge against a potential value decline in a portfolio.
- We also discuss the benefits of using derivatives to hedge risk as well as the challenges that come with using derivatives in hedging.

Derivatives Strategies

- Investors use derivative contracts for various reasons, including to **manage risk (hedging), to make profits by anticipating changes (speculating) or arbitrage** - entering into similar transactions in two or more related markets in order to profit from any price discrepancies between the markets.
- This note focuses on **hedging** as a risk management tool.
- **Hedging is the practice of reducing or fully eliminating the risk (of opposite price movement) associated with holding a volatile asset.**
- A fall in the value of an asset is compensated by an increase in the value of the derivative contract.
- Volatility of stock prices can be caused by a number of factors including: political developments, economic indicators, change of management, overseas volatility among others.
- Derivatives offer a sophisticated risk management tool. Investors buy or sell derivatives securities to manage the risk associated with the underlying securities.

Hedging Example

- An investor who holds 30,000 KCB shares with a spot price of KES.40 per share (value =KES.1,200,000) and is concerned about a possible decline in the value of the portfolio can use KCB futures to hedge this risk, if they do not wish to sell their shares.
- The investor would take a short position using futures that resemble the portfolio (selling the KCB futures contract).
- If the investor is expecting the price of KCB shares to decline to KES. 35 within a 3 month period, they would take a short position in the KCB futures contract.
- One KCB futures contract gives an investor exposure to 1,000 KCB shares, valued at KES.40,000. The investor would require 30 contracts (1,200,000 ÷ 40,000) to match the value of the stock portfolio.
- Within the 3 month contract period, the value of the portfolio fluctuates as does the value of the futures contract.
- Assuming the value of the shares declines to KES. 35 per share, the investor's loss on the portfolio would be offset by a gain on the futures contract.

Loss on the value of shares = **KES.150,000 (KES. 5 x 30,000 shares)**
Gain on the futures contract = **KES.150,000 (30 contracts x 1000 shares x KES.5)**

Stock Portfolio		**Futures Contract**	
Initial value	KES.1,200,000	Exposure	**-**KES.1,200,000
Loss after decline in share price to KES. 35	=(KES.5 x 30,000)= **-**KES.150,000	Gain on decline of futures price	=[1000 share x 30 contracts x KES.5 = **+** KES.150,000
Final Value	**KES.1,050,000**		**KES.150,000**
KES.1,050,000+ KES.150,000 = KES.1,200,000 - The gain on the short futures contract offsets the loss on the portfolio value			

Source: Sterling Capital Research

Benefits of using derivatives to hedge risk

- There are several benefits of using derivatives as a risk hedging tool:

1) **Value protection** - The efficient use of derivatives to hedge risk prevents deterioration of the value of a portfolio.

2) **Increased performance** - Asset managers are likely to report better stock performance if proper hedging techniques are employed in managing their portfolios.

3) **Savings on costs** - Offloading shares that are expected to decline in price can incur high transaction costs for investors. These costs can be saved by hedging a portfolio to avoid selling the shares altogether.

Challenges in using derivatives to hedge risk

- Some of the challenges of using derivatives to hedge risk include:

1) **Short - dated contracts - The** NSE Derivatives market (NEXT) only offers short contracts (3 months – 1year). This period might be too short for asset managers that have a longer investment horizon and would like to hedge their portfolios against price fluctuations.

   The asset manager can however roll over the futures contract to extend the expiry date of the contract.

2) **High Risk** - The high volatility of the derivatives exposes them to potentially huge losses. Derivatives are highly leveraged and can result in exponential losses in case the price of a stock moves in the opposite direction than expected.

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