

TOPIC 6 – OVERVIEW

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1. TRADING DERIVATIVE PRODUCTS

- This section covers:
 - Risks and benefits of trading derivatives
 - Fundamental and technical analysis of the market
 - Trading practices
 - Dealing with clients

1.1 Risks and Benefits of Derivative Products

- Derivatives trading offers benefits, but comes with risks

1.1.1 Risks

Market Risk

- The **chance of losing money** from movements in price as a result of changes in market conditions, be it interest rates, exchange rates and volatility
- Given the element of leverage with derivative products, market risk can be substantial

Liquidity Risk

- The **chance of losing money** from there being no buyers or sellers when you want to enter or exit a position
- Liquidity risk is greater in OTC markets than in exchange-traded markets

Credit Risk

- The **chance of losing money** from a counterparty failing to meet its financial obligations
- Credit risk is not an issue with exchange-traded markets as clearing houses guarantee settlement through novation – it is more of an issue with OTC markets
- OTC risk is being addressed by regulators worldwide after the 2008 episode

Basis Risk

- The chance of losing money from differences between the prices in the physical and futures markets. Basis risk can be broken down into three sub-categories:
 - **Delivery basis:** Cost of delivery, including storage, insurance and funding costs
 - **Grade basis:** Difference between grade of asset being hedged and underlying asset of derivative product
 - **Hedge basis:** Hedging an exposure using closely related, but not perfectly correlated, reference underlyings. For example, bonds with different tenors

1.1.2 Benefits

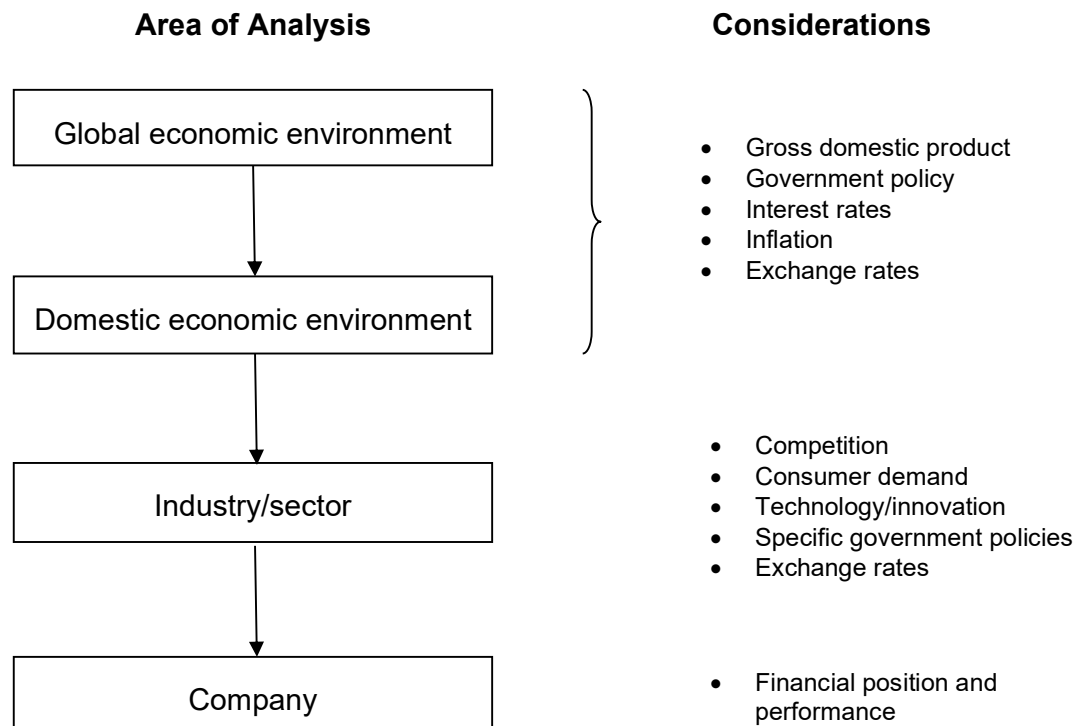
- The many benefits to trading derivatives include:
 - Hedging against price risk
 - Gaining exposure to underlying asset classes quickly, without having to acquire or short those assets
 - Using a highly leveraged product allowing a multiplication of return on investment, with only a fraction of the capital needed to establish the position
 - Earning a risk-free profit through arbitrage between cash and derivative markets

1.2 Analysis of the Market

- The two common methods used to analyse securities are:
 - **Fundamental analysis:** assigns an intrinsic value to a stock by considering the company's financials and operations, asset values, anticipated earnings and growth potential, and the economic environment and business cycles
 - **Technical analysis:** studies technical factors such as price movements, volume and trading activity as indicators of future trends
- There are two basic approaches to **fundamental analysis:** top-down analysis and bottom up analysis

Top-down Analysis

- Takes a macro view, gradually moving down to a micro view



Bottom-up Analysis

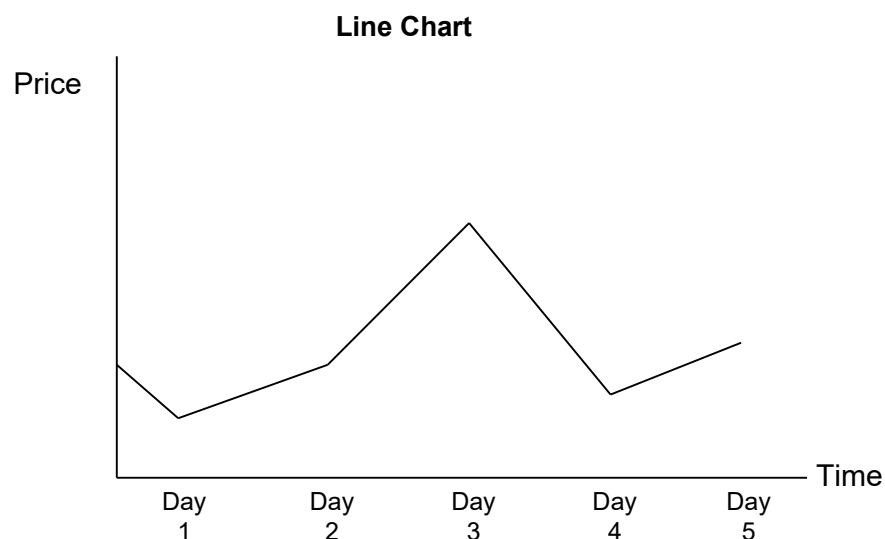
- Starts by focusing on a particular company to establish its intrinsic value
- Looks at a company's financial performance first and then considers the industry sector finishing with a review of the economy as a whole
- In practice, an analyst would most likely use a combination of the two analysis approaches

1.2.1 Technical Analysis

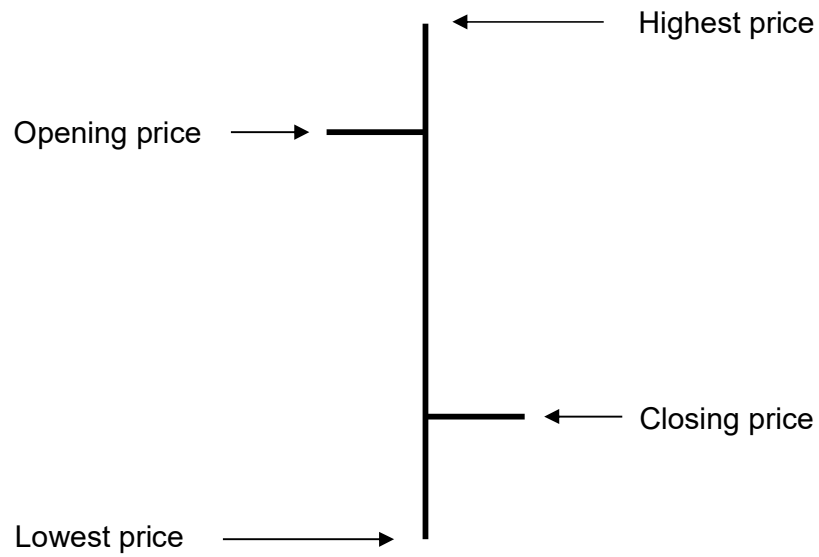
- Technical analysis evaluates securities by using historical market data to predict future market trends
- Technical analysts assume that previous patterns in price movements will repeat themselves
- Technical analysis relies heavily on charts and historic data

Charts and Trend Lines

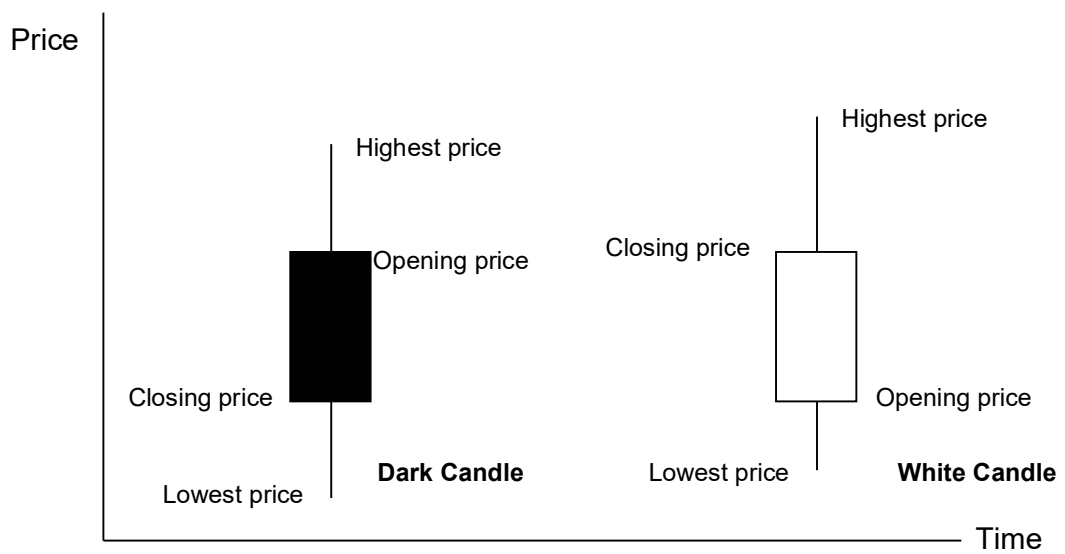
- Technical analysis uses four basic types of charts:
 - **Line charts:** closing prices for the chosen time period are plotted and a line is drawn connecting all the plots
 - **Bar charts:** highest, lowest, opening and closing prices for the chosen time period are plotted as vertical bars
 - **Candlesticks:** are diagrams showing the opening, highest, lowest and closing prices as price movements
 - **Point and figure charts:** use a system of Xs and Os to show downward and upward price movements
- Examples of each type of chart follow



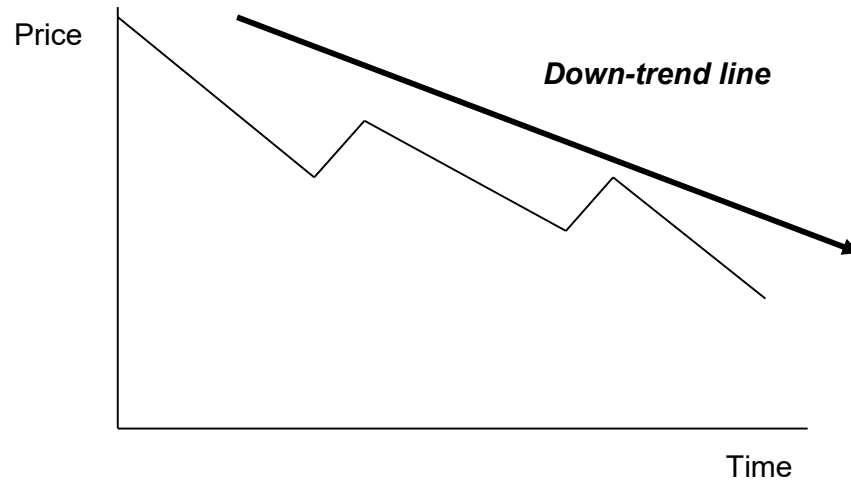
Bar Chart



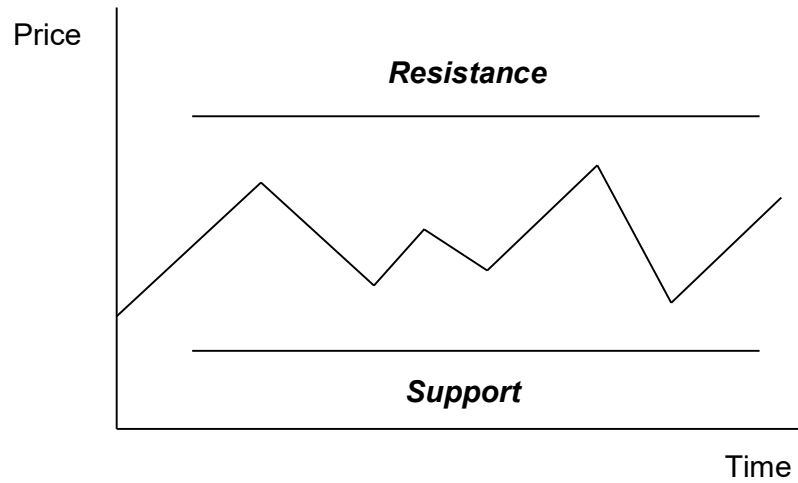
Candlestick



A Down-Trend Line



A Sideways Trend



Support and Resistance

- Resistance levels are price peaks and support levels are price troughs
- **Support** occurs when market buying activities are sufficiently strong to overcome selling pressures, pushing the price higher
- **Resistance** occurs when selling pressure is strong enough to overcome buying pressure, pushing the price lower
- A support or a resistance level **grows in significance**:
 - the longer it is traded
 - the higher the volume of activity at the support/resistance levels
- Once a support/resistance level is **broken through**, it reverses. That is, a resistance level becomes a support level and a support level becomes a resistance level

Mathematical Technical Analysis

- Technical analysts use a number of indicators to read market trends. Three such indicators are:
 - Moving average
 - Relative strength indicator
 - Moving average convergence-divergence indicator
- There are many more models available to the enthusiastic analyst

1.3 Trading Practices

1.3.1 Types of Orders

- All trading on the Hong Kong Futures Exchange (HKFE) is conducted electronically using the Hong Kong Automated Trading System (HKATS)

Order Types on HKATS

- Two primary types of orders in HKATS:
 - **Limit order**: a price limit is assigned by the user
 - **Auction order**: an order with no specified price – unfilled orders are automatically cancelled at the end of the pre-opening session

Orders Managed by a Broker

- A broker is involved in several other types of order:
 - **Market order**: the broker is instructed to execute the trade at the best price currently available
 - **Limit order**: the broker is instructed to buy or sell at a specified price. Usually, the price for a “buy” limit order is below the current market price, while a “sell” order is above it

- **Stop-loss/gain order:** a stop-loss order is used for risk management purposes to ensure that market movements do not erode an open position and cause a loss greater than an amount the investor is comfortable with. A stop-gain order is the reverse, used to lock in a profit before market movements erode the profit
- **Spread order:** a broker is instructed to buy one contract and sell a related contract

1.3.2 Trading Hours

- **Trading hours** for different derivative products **may vary** and can be found in the contract specifications
- Most major derivative exchanges worldwide hold **extended after-hours trading sessions** to enable hedging and trading activities in response to market moving events outside normal trading hours

1.3.3 Volatility Control Mechanism (VCM)

- A **five-minute cooling-off period** will be imposed for a particular derivative contract if the market price moves by more than the specified triggering threshold (+/- 5%) from its last traded price 5 minutes before. **Normal continuous trading will resume when the 5-minute cooling-off period ends** - there is a maximum of one trigger per continuous trading session. Multiple triggers were permitted from April 2021
- The instrument will still be allowed to trade during the cooling off period, but within certain price limits
- VCM is designed to safeguard market integrity from extreme price volatility arising from trading incidents such as “flash crash” and algorithm errors
- VCM does not apply to the first 15 minutes of morning and afternoon continuous trading sessions and the last 15 minutes of the afternoon session

1.4 Dealing with Clients

- This section looks at some of the **requirements that must be met when dealing with clients** in relation to trading futures and options on HKFE
- The Code of Conduct stipulates that an intermediary has a duty to know the full identity of each client (**KYC**) as well as each client’s financial situation, investment experience and investment objectives
- Clients should **understand the nature and risks of derivative products** and have sufficient net worth to be able to bear risk
- Intermediaries should assess clients’ understanding of the nature and risks of derivative products
- **Risk disclosure:** Brokers must ensure that clients are given and sign a risk disclosure statement and a client information statement
- **Client agreement:** This should cover an individual account that can only be used by the broker to transact futures and/or options contracts on behalf of the client that are traded on HKFE

- **Dealing with client transactions:** Brokers are not permitted to trade their own accounts until all executable orders for clients have been transacted and they are not permitted to take the opposite side of a client's order unless (i) the client has given written permission; and (ii) open interest and/or turnover is lower than the level prescribed by HKFE
- **Responsibility for collecting margins:** A broker must ensure that, before a trade is executed, the client has deposited sufficient collateral to cover the minimum HKFE margins and the client's expected trading liabilities. HKFE margins must be cash-settled by the client
- **Monitoring the performance of client accounts:** A broker must monitor a client's ability to meet margin calls or demands. Should a client fail to meet two successive margin calls, which exceed the prescribed threshold, the broker must inform HKFE and provide the client's account details. A broker may also liquidate a client's collateral if the client fails to meet any margin calls
- **Client money:** Brokers should keep a segregated bank account for each client
- **Client ledgers:** Brokers must maintain a ledger account for each client. Information in each ledger account should cover all HKFE trades, all non-HKFE trades and all trades that are not futures/options transactions
- **Commissions:** Brokers can negotiate commission levels with clients
- **Large open positions:** Brokers must report any large open positions held by either themselves or their clients to the HKFE

1.5 Value-at-Risk (VaR)

- VaR is a standard statistical technique to assess risk
- VaR measures the worst expected loss over a given time interval under normal market conditions, at a given confidence level
- For example, if an institution declared that its trading portfolio had a daily VaR of \$100m at 95% confidence, this would mean there is a 5% chance that the daily loss will exceed \$100m under normal market conditions
- Normally, an increase in asset price volatility will lead to a larger VaR

2. MARGINING SYSTEMS

- Margining is one of the risk management tools used by HKEX clearing houses to guarantee performance of contracts
- Margin payments are security deposits collected by the clearing houses to cover any potential losses in the event that the market moves against an open position
- Brokers collect appropriate margin from clients and pass them on to the clearing houses
- Both buyers and sellers of futures need to deposit margin
- While option buyers do not need to post margin, option sellers may need to post margin if they face a loss position
- Portfolio Margining System (PRiME) is the margining method used by the clearing houses at HKEX

2.1 Margining Methods

- Margin levels required by HKFE vary with changes in the values of underlying assets and any changes in the volatility of futures prices
- There are four margin categories:
 - Initial margins
 - Maintenance margins
 - Intra-day margins
 - Clearing House margins
- The first three apply to clients, while the Clearing House margins apply to HKCC Participants
- Client margins are calculated by HKCC Participants – it's the HKFE that specifies the minimum margin that an HKCC Participant must collect from its clients

Initial Margins

- An initial margin is paid when opening a position – it provides cover against any loss that occurs when the position is first opened

Maintenance Margins

- A maintenance margin is a safety level maintained once the initial margin is paid
- When the margin level falls below the maintenance level, a margin call for a deposit is issued to restore the account balance back to the initial margin level

Intra-day Margins

- In certain volatile market conditions, an HKCC Participant is entitled to make an intra-day margin call, rather than waiting to the end of the day

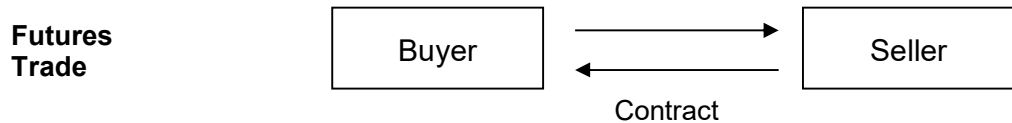
Clearing House Margins

- Every HKCC Participant has a continuing obligation to maintain Clearing House margin at the level and during the period from time to time stipulated by the Clearing House

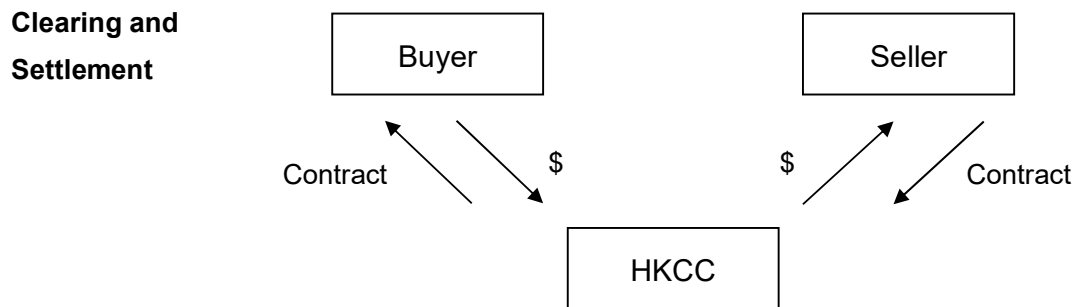
3. DERIVATIVES CLEARING AND SETTLEMENT

3.1 HKFE Clearing Corporation (HKCC)

- HKCC clears and registers futures trades
- Its role is to act as counterparty to both sides of every trade and to guarantee settlement of all contracts, known as novation
- The following diagram shows how novation allows HKCC to become the counterparty to both sides of a trade:



[Futures trades are matched using the Hong Kong Automated Trading System (HKATS)]



[Futures trades are cleared and settled using the Derivatives Clearing and Settlement System (DCASS)]

- HKCC must meet all liabilities should either party default, thereby guaranteeing the performance of futures contracts
- While the HKCC is obliged to meet the financial obligations of the defaulting counterparty, the actual amount is limited to:
 - Margin collected and on deposit with HKCC
 - The value of the HKCC reserve fund
- The reserve fund has been established by HKCC to provide funds to cover defaulting Clearing Participants
- The reserve fund comprises the initial participant contribution, interest income earned from the reserve fund deposit and other resources as determined by the clearing house

4. OVER-THE-COUNTER DERIVATIVES TRADING AND CENTRAL COUNTERPARTY CLEARING

- The OTC market is a network of major banks and financial dealers
- OTC markets include electronic trading platforms hosted by either a financial information provider, a single financial institution, a group of financial institutions or an exchange

4.1 Trade Execution and Confirmation

- The OTC market is decentralised where a trade can be executed directly between two parties
- After the trade, the two parties send each other electronic confirmations of the deal

4.2 Mandatory Reporting

- Those involved in OTC trades are required to report specified OTC derivatives transactions to the Hong Kong Trade Repository (HKTR)
- An institution with a reporting obligation must become a member of the HKTR under the Hong Kong Monetary Authority
- Reporting of a transaction must be within two business days of trade execution
- The HKTR covers reporting of the following product classes:
 - Interest-rate derivatives
 - Foreign-currency derivatives
 - Equity derivatives
 - Credit derivatives
 - Commodity derivatives

4.3 Central Counterparty (CCP) Clearing

- After the 2008 global financial crisis, many jurisdictions established their CCPs as central clearing houses for OTC derivatives transactions when mandatory reporting was introduced
- After OTC trades have been executed between two clearing members, the clearing members register their trades with a designated CCP, which will assure that clearing members have sufficient collateral to support their OTC trades