Types of Derivatives

- **Derivatives** A security in which its price is dependant on an underlying asset - stock, commodities, currencies etc.
- **Future/Forward:**
  - Buyer - obligation to buy a security at a pre-specified time (expiration) and price (strike)
  - Seller - obligation to sell a security at a pre-specified time (expiration) and price (strike)
  - Futures are *standardized* (futures exchange) and Forwards are *private agreements* (OTC)
- **Swap:** Contracts where two parties exchange financial instruments
    - Example: Interest Rate Swaps

Bank’s Role

- **Service Industry**

- **The other side of a derivative contract**
    - If a hedge fund wants to buy options, they would go to a financial institution through brokers

Futures

- A **Futures Contract** is an agreement between two parties to trade an asset for a specified price at a future date

- Primarily used by institutions to speculate on commodities

- Also used by corporations to hedge risk

- Accidental delivery is ideally avoided

Forwards

- A **Forward** or **Outright** is similar to futures, but the term is primarily used in reference to foreign exchange markets

- Outrights can be used to hedge risk or speculate

- Outright rates differ from spot rates to prevent arbitrage, as well as price in expectations for spot movements

- See carry trade for more in depth uses

NDF

- Some countries have currencies with shallow market depth or strict regulations, such as the Chinese Yuan, making them difficult to trade
- A **Non-Deliverable Forward** is a contract that can be used to speculate or hedge in the same ways as a normal forward
- The difference is that you can never receive the actual currency, you are paid back in USD at the end of the contract
- USDCNH vs. USDCNY

Options - why?

- **Leverage**
  - Mimic existing market positions with a much smaller initial cash input today
- **Speculate**
  - Expectation of where the market is going
- **Hedge Risks**
  - Long underlying asset → Protected from downside risk

Calls and Puts

- **Calls** and **Puts** are the most basic/ vanilla options

- Strike prices can be above, equal to, or below the current asset price
  - This corresponds to an option being “In the Money”, “At the Money”, or “Out of the Money”

	CALL	PUT
LONG * Buyer of options contract * Has the right to exercise contract	LONG CALL * Buying the right to buy the underlying at the strike price * Bullish	LONG PUT * Buying the right to sell the underlying at the strike price * Bearish
SHORT * Seller of options contract * Obligated to fulfill contract if exercised	SHORT CALL * Obligated to sell the underlying at the strike price * Bearish	SHORT PUT * Obligated to buy the underlying at the strike price * Bullish

<u>Example</u>

TTF buy 30mm 22Dec17 1.17 EURUSD call at 6.85

Underlying Asset: ???
Notional: ???
Strike: ???
Expiration: ???
Option Price: ???