

Summaries of Finance 4366, Part 1 Readings (January 30 - February 13)

Chapter 1 - Introduction

- Derivatives have become increasingly important in finance in recent years.
- Futures and options are actively traded on exchanges worldwide.
- Various types of forward contracts, swaps, options, and other derivatives are utilized by financial institutions, fund managers, and corporate treasurers in the over-the-counter market.
- Derivatives are integrated into bond issues, executive compensation plans, capital investment opportunities, and risk transfer mechanisms in mortgages.
- Understanding how derivatives work, their uses, and pricing has become essential for finance professionals and individuals outside the finance sector.
- Derivatives are used for hedging, speculation, and arbitrage by different types of traders such as hedgers, speculators, and arbitrageurs.
- The credit crisis following the Lehman bankruptcy led to increased regulation in derivatives markets, including higher capital requirements for banks and a focus on liquidity.
- The chapter provides an overview of forward, futures, and options contracts, explaining their obligations and types (calls and puts) traded on various underlying assets.
- Derivatives exchanges offer standardized contracts for trading, with derivatives exchanges existing for a long time to facilitate trading activities.

Chapter 2 - Mechanics of Futures Markets

- Futures contracts are agreements to buy or sell an asset at a future time for a certain price, traded on organized exchanges with standardized terms.
- Closing out a futures position involves entering into the opposite trade of the original one to realize gains or losses based on price changes.
- Specifications of a futures contract include details such as the asset, contract size, delivery location, and delivery time.
- Delivery in futures contracts is rare, but understanding the delivery process is crucial as it ties futures prices to spot prices.
- The majority of futures contracts do not result in physical delivery of the underlying asset, with traders typically closing out positions before the delivery period.

- Contract specifications are essential for exchanges to define what can be delivered, where, and when, along with trading hours, price quoting methods, and more.
- Margins play a vital role in futures markets, with daily adjustments reflecting gains or losses, and margin calls ensuring account sufficiency.
- Information on futures prices is collected systematically and disseminated quickly to investors worldwide.
- Futures contracts differ from forward contracts in terms of being traded on exchanges, standardized terms, and regulatory oversight.
- The chapter also covers risk management lessons, hedge accounting, and practical questions related to futures trading.
- Various exchanges globally facilitate futures trading, with examples including the CME Group, NYSE Euronext, Eurex, BM&F BOVESPA, and the Tokyo International Financial Futures Exchange.

Chapter 9 - Mechanics of Options Markets

- Types of Options:
 - Two basic types: call options and put options.
 - Call option gives the holder the right to buy an asset at a specified price by a certain date.
 - Put option gives the holder the right to sell an asset at a specified price by a certain date.
 - Options can be American (exercisable anytime before expiration) or European (exercisable only on expiration date).
- Option Positions:
 - Four types of option positions: long call, long put, short call, short put.
 - Long position involves buying the option, while short position involves writing (selling) the option.
- Option Payoff:
 - Payoff from writing a European call option is influenced by the final stock price compared to the strike price.
 - Payoff from writing a European put option is similarly affected by the final stock price and strike price.
- Trading and Clearing:

- Options are traded on various assets like stocks, stock indices, currencies, and futures contracts.
- Exchanges specify contract terms including size, expiration time, and strike price.
- Options Clearing Corporation (OCC) guarantees fulfillment of options contracts and records positions.
- Margin Requirements:
 - Initial margin calculation determines the funds required to enter an options position.
 - Daily margin calculations adjust based on market prices, leading to margin calls if additional funds are needed.
 - Different trading strategies like covered calls have specific margin requirements.
- Exotic Options:
 - Over-the-counter market offers exotic options tailored to specific client needs.
 - Exotic options may have unique structures different from standard calls and puts.
- Adjustments:
 - Options contracts are adjusted for stock dividends, stock splits, and rights issues to maintain positions of both parties.

Chapter 5 - Determination of Forward and Futures Prices

- Relationship between Forward and Spot Prices:
 - Forward prices and futures prices are closely related to the spot price of the underlying asset.
 - Results obtained for forwards are usually applicable to futures when the maturities of the contracts are the same.
 - The forward price and futures price of an asset are typically very close when maturities align.
- Investment Assets vs. Consumption Assets:
 - Investment assets are held for investment purposes by significant numbers of investors (e.g., stocks, bonds, gold, silver).
 - Consumption assets are primarily held for consumption and include commodities like copper, oil, and pork bellies.
 - Arbitrage arguments can be used to determine forward and futures prices of investment assets from spot prices and market variables, but not for consumption assets.

- Short Selling and Regulations:
 - Short selling involves selling an asset not owned, with the aim of profiting from a decline in its price.
 - Regulations on short selling have evolved over time, with rules like the uptick rule and temporary bans during market volatility.
- Assumptions and Notation:
 - Assumptions include no transaction costs, consistent tax rates on profits, equal borrowing and lending rates, and the ability to exploit arbitrage opportunities.
 - Notation used includes T for time until delivery, S_0 for current asset price, F_0 for forward or futures price, and r for risk-free interest rate.
- Examples and Applications:
 - The chapter discusses scenarios involving investment assets with no income, known dollar income, and known yield.
 - It provides insights into determining futures prices for stock indices, currencies, gold, and silver based on the relationships between spot and futures prices.

Chapter 10 - Properties of Stock Options

- Introduction to factors influencing stock option prices, put-call parity, and early exercise considerations.
- Factors affecting option prices: current stock price, strike price, expiration date, volatility, interest rate, and dividends.
- Exploration of put-call parity: relationship between European call and put options and underlying stock price.
- Analysis of American options: optimal exercise strategies for calls and puts, impact of dividends on exercise decisions.
- Examination of upper and lower bounds for option prices and their implications for arbitrage opportunities.
- Discussion on the effect of dividends on option pricing and modifications to put-call parity equations.
- Consideration of early exercise scenarios.
- Insights into the attractiveness of early exercise for American puts.

Chapter 11 - Trading Strategies Involving Options

- Introduction to various trading strategies involving options.
- Explanation of spreads, including bull spreads, bear spreads, and butterfly spreads.
- Overview of common trading strategies like covered calls and protective puts.
- Comparison between straddles and strangles in options trading.
- Exploration of other payoffs and strategies such as reverse spreads.
- Emphasis on combining options with other assets for risk management and enhanced returns.