Andreas Krause

Options strategies

Options in financial markets

- Options gives the purchaser the right to choose an action, but he is not obligated to conduct the action
- For options in financial markets this action is the purchase or sale of financial assets
- The seller of the option (writer) is required to accept the action of the purchaser and sell or buy the financial assets
- Futures and swaps put obligations on both parties, options impose obligations only on the seller

The importance of options

- Options are a central element in finance, but they are not only found in financial markets
- Option theory can be applied to decide the optimal timing of investments: invest now or wait?
- Option theory can be used to determine the value of shares with limited liability and the value of corporate bonds
- Option theory can be used to determine default rates of companies from observing their stock prices

Hedging strategies with options

- A limitation when hedging using of futures or swaps is that losses and profits are eliminated
- In many cases investors are concerned about eliminating losses, but want to retain any potential profits
- We will see that options are able to achieve exactly this result

Andreas Krause

Hedging with options

Reducing losses and retaining profits

- A call (put) option gives the purchaser the right to buy (sell) an asset at a set price in the future
- Options allow investors to hedge their assets such that they have losses limited and profits retained

? Why would not every investor hedge with options if losses can be eliminated but profits are maintained?

! Investors have to pay a premium when purchasing an option, imposing some losses if the option is exercised and reducing profits otherwise; these costs make options not always attractive

Using options to create payoff profiles

- Options allow investors to hedge their positions, but options are available even if the underlying asset is not held
- Investors can purchase different options on the same underlying asset and create bespoke payoff profiles
- This is attractive to investors who have specific information about the underlying asset
- It can also be used to create payoff profiles that suit their needs in terms of risk exposures when considering their entire portfolio of assets

Investment strategies with options

Andreas Krause

Options meeting the needs of investors

- Options are flexible in creating payoff profiles that benefit investors who assess the value of assets differently or have opinions about future volatility of assets
- Using exotic options, nearly every possible payoff profile can be created

? If options are so flexible, why are not more private investors using them?

! Options are difficult to understand and choosing the correct combination can be difficult; in addition, combinations of exotic options can have unexpected properties in extreme market scenarios

Relating put and call options

- Options can be companied to create a variety of payoff profiles, including those that resemble other options
- The main building blocs of options are put options and call options
- We will look into the relationship between these two option types

Andreas Krause

Put-Call parity

Focussing on call options only

- The value of put and call options have a close relationship as expressed by the Put-Call parity
- Given this relationship, it is common to focus on call options only and then obtain the value of a put option from the put-call parity
- The Put-call parity is only applicable for standard European options, although similar relationships have been obtained for many other option forms

Summary

- Options give purchasers the right to buy or sell asset at given prices in the future
- Options can be used to hedge positions such that losses are limited and profits retained
- Options can also be used as building blocs to create bespoke payoff profiles and thereby bespoke risk profiles for investors

Picture credits:
Cover: Premier regard, Public domain, via Wikimedia Commons, https://commons.wikimedia.org/wiki/File:DALL-E_-_Financial_markets_(1).jpg
Back: Rhododendrites, CC BY-SA 4.0 https://creativecommons.org/licenses/by-sa/4.0, via Wikimedia Commons,

Andreas Krause
Department of Economics
University of Bath
Claverton Down
Bath BA2 7AY
United Kingdom

E-mail: mnsak@bath.ac.uk