

Corporate Finance, Module 20: "Introduction to Options"

Readings for the Fourteenth Edition (2022) of the Brealey, Myers, Allen, and Edmans text

(The attached PDF file has better formatting.)

The sections in this posting are for the *fourteenth* edition of the Brealey, Myers, Allen, and Edmans text. You may also use the seventh through thirteenth editions; final exam problems can be answered from any edition.

{The Brealey, Myers, Allen, and Edmans textbook is excellent. We say to read certain sections and to skip others. This does not mean that certain sections are better; it means that the homework assignments and exam problems are based on the sections that you must read for this course. Some of the skipped sections are fascinating, but they are not tested.}

Modules 20, 21, 22, and 23 cover options.

- ! Module 20 is an introduction to options; puts, calls, and put call parity.
- ! Module 21 covers basic pricing techniques: option deltas and binomial trees.
- ! Module 22 covers real options: follow-on investments, timing, and abandonment.
- ! Module 23 covers advanced topics: risky bonds, Black-Scholes, and American options.

Read the introduction to chapter 21 on pages 614-614. This introduction covers topics in all four of the options modules for this course.

Read section 21.1, "Calls, Puts, and Shares." The sections are cumulative: to understand options pricing, you must know the payoff patterns for calls and puts. Focus on the differences between calls and puts, between buying and selling an option, and between payoffs and profit. Review Figures 21.1, 21.2, and 21.3, which are combinations of horizontal and diagonal line segments; be sure to understand (i) why the horizontal line is above or below the x-axis by the amount of the option premium and (ii) why the break-even point is more or less than the strike price.

Read section 21.2, "Financial Alchemy with Options." Focus on equation 21.3, the put call parity relation on page 621: " $c + PV(X) = p + S$." The textbook writes this as "value of call + present value of exercise price = value of put + share price." The final exam tests this relation. Know this section well: each semester, you can expect an exam problem that depends on the put call parity relation. Figures 21.5 and 21.6 help you grasp this relation.

Read section 21.3, "What determines option values." Review Example 21.5, "Option values increase with share volatility; Figures 21.10 and 21.11 help you visualize volatility. An exam problem may say that the price of a call option decreased/increased from Monday to Tuesday and the price of the put option on the same stock increased/decreased and ask for the likely cause (e.g., increase or decrease in stock price, increase or decrease in volatility).

Read the sub-section "Spotting the Option" on pages 623-624. When spotting options, ask a series of questions:

- ! What is the risky asset or liability? (This is the underlying security of the option.)
- ! What is the non-risky asset or liability? (This is the strike price.)
- ! How does volatility of the risky item affect the value of the option?
- ! What are the rights of the option holder that affect the option value?

Understand and memorize Table 21.2 on page 629. The understanding takes time and review of problems; first memorize the table so you know what to expect.

Review end of chapter problems 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 16, 19, 20, 21, 29, 32.

Illustrative test questions, problems, and homework assignments are shown separately on the discussion forum.