Corporate Finance, Module 6, "Risk, Return, and the Opportunity Cost of Capital"

Corporate finance module 6: Readings for Eleventh Edition

(The attached PDF file has better formatting.)

The page numbers here are for the *eleventh* edition of Brealey and Myers. You may also use the seventh, eighth, ninth, or tenth editions of this text. The page numbers for earlier editions are in separate postings. The substantive changes in the textbook are slight among these editions, but the final exam problems are based on the eleventh edition.

{The Brealey and Myers 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.}

Section 7.1 on pages 160-167 reviews modern portfolio theory, which is needed for the discussions of stock values, dividends, and capital structure. This is not a course on investment theory; we use investment concepts for financial theory. When you use concepts like market risk premiums, your audience wants to know how you chose the assumptions. Section 7.1 gives you the background for these concepts. The financial principles are tested on the final exam; you need not know the history of U.S. stock returns.

Modules 1-5 are mathematical tools (present value, NPV, IRR, stock values). Modules 6 - 23 are theory; they posit relations that explain how firms act.

We use the material in Module 6 when setting rates of return for insurance products. You need not memorize the details on pages 165-167 (Figures 7.3 and 7.4), but you should know the *relative* returns of different investments; see Table 7.1 on page 162, with a 7.3% risk premium for common stocks. The relative returns are important for the modules on CAPM betas and capital structure.

Read the subsection on "arithmetic averages and compound annual returns" on pages 162-163. Know the moral on page 153: "… use arithmetic averages, not compound annual rates of return."

Read the subsection on "using historical evidence to evaluate today's cost of capital," and know the two reasons on pages 164-166.

Section 7.2 explains how to calculate variances and standard deviations, which you already know. The section *measuring variability* is similar. This is background reading; if you are unfamiliar with these topics, read the text. We use the tools to measure betas in later modules. The final exam may ask to compute the variance of a portfolio of diversified stocks. Know the formulas for the variance of correlated random variables.

Read the subsection on "how diversification reduces risk" on pages 171-174. This section is mostly pictures; there is no math here. This subject is important for ERM analyses.

Read section 7.3, "Calculating Portfolio Risk," on pages 175-178. Know the relation between the covariance and correlation on page 175 and the formula for the portfolio variance on pages 175-176. Know the section "limits to diversification" on pages 177-178; the final exam tests the formula for the portfolio variance on the top of page 178.

The CAPM beta is the covariance of the stock return with the market return divided by the variance of the market return. This is the beta (slope parameter) of the regression of the stock return on the market return. The final exam may give the correlation and standard deviations and ask you to derive the beta.

The final exam may give the average variances and covariances among stocks in a well-diversified portfolio and ask you to calculate the standard deviation of the portfolio.

Read section 7.4, "How individual securities affect portfolio risk," on pages 178-182. Brealey and Myers are strong advocates of NPV, the CAPM, and real options. Most financial analysts agree with their general views, but not all share their zeal on these subjects. This course emphasizes these subjects, since we are using the Brealey and Myers textbook. Your company may prefer IRR to NPV, use market averages instead of the CAPM, and disregard real options. These views may reflect well-thought out opinions, not ignorance; you should understand all sides of these subjects.

Know the top paragraph on page 181: "The general point is this: … is driven by security betas."

Know the equation for beta as the covariance divided by the market variance in Table 7.7 and the footnote at the bottom of page 181. This relation comes up frequently, and it is tested on the final exam. The formula for beta is repeated in subsequent modules.

Read section 7.5 on page 182. Focus on the second paragraph: "Diversification is … But investors can diversify."

Read the summary on page 183.

Review problems 4, 7, and 9 on page 185, and problems 14, 16, and 20 on pages 186-187
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