

Corporate Finance, Module 5, "Investment Decisions and Net Present Value"

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.}

Read Section 6-1, "Forecasting a project's cash flows" on pages 150-157. Insurance products are more complex, since

- ! distributable income is used instead of cash flows
- ! reserves and risk-based capital requirements are like working capital
- ! either the risk-free rate or a risk adjusted rate is the discount rate for future claim payments.

The Brealey, Myers, Allen, and Edmans text is an ideal scenario. Read it for the concepts; the application to insurance is not easy. All the items in this section are tested on the final exam, but the items listed above have particular importance for insurance pricing. For example, sunk costs are less important for insurers than for manufacturers, but they are relevant to insurance pricing too.

Section 6.2 is *optional*: the final exam does *not* test example 6.1 or the details in this section, but the concepts are used extensively in later modules, especially the discussions of capital structure and of tax shields. Taxes are covered in the financial accounting course; the final exam for this course will specify the after-tax cash flows, but you must calculate the tax shields from depreciation and from corporate debt. Corporate and personal income taxes depend on the country and are often complex.

Read Section 6-3 "A Worked Example of a Project Analysis." Tax shields are critical to this course; know formulas 6.3A, 6.3B, and 6.3C. Read "How to Construct a Set of Cash Flow Forecasts: An Example," and know how the values in table 6.2 and table 6.3 are computed. Read "Investment in Working Capital" on pages 162-163; changes in inventory, accounts receivable, and accounts payable affect working capital. Read "Accelerated Depreciation and First-Year Expensing"; you will not have to compute accelerated depreciation schedules on the final exam, but you must know how depreciation schedules affect taxes and NPV.

Read Section 6-4 "How to Choose between Competing Projects," with four types of decisions that affect the choice of projects. Final exam problems will give projects with different cash flows and ask you to compare them, using either NPV or IRR.

Question: Many tables in this textbook use accounting terms, such as cost of goods sold, change in working capital, and depreciation. I don't have an accounting background, and these terms are not used for insurance. Must we know these items for the final exam?

Answer: Module 24, the last module in this course, covers basic accounting measures which you will be tested on. Accounting is the language of business, and the textbook assumes that you know the terms. Understand EBIT (earnings before interest and taxes), tax depreciation, how debt and stockholder dividends are treated, and the components of equity (common capital, capital paid-in, Treasury stock, retained earnings).

Question: How well must we know these items?

Answer: You must derive the market value of equity and debt from accounting statements, the return on book equity, the tax liability, and other determinants of cash flow. You are not being tested on accounting, but you must know basic accounting concepts to understand the textbook.

The *key takeaways* at the end of chapters are good reviews of the material. All six entries in the checklist are important; focus especially on the fourth and fifth:

- ! Forecast cash flows as if the project is all-equity-financed. Project cash flows should exclude debt interest or the cost of repaying loans. This enables you to separate the investment from the financing decision.
- ! Calculate cash flows after taxes. Although depreciation is not a cash flow, it does affect the taxes that the company pays.

Review problems 12, 13, 14 on page 175; the final exam uses similar scenarios. Problems 15, 16, 17, 18, 19 are more complex than the final exam problems, but they judge how well you understand the financial analysis. Problems 22, 23, 24, 25 are even longer, but they provide good practice of the financial concepts.

Skip the mini-case (New Economy Transport Company) on pages 181-183. The mini-case is interesting and well worth reading, but no final exam questions are based on this case.

Question: These first five modules are not difficult; is the rest of the course similar?

Answer: The modules on dividends, capital structure, and option pricing are difficult; the early modules are easier. If you are comfortable with present values, internal rate of return, common stock values, and capital markets, you should read ahead to the more difficult modules at the end of this course. Some candidates do not leave time for the modules on capital structure and option pricing. The on-line course has a tight structure; there are only a few days between the option pricing modules and the final exam.

Question: Does the final exam weight each module equally?

Answer: The SOA recommended syllabus for VEE corporate finance places more weight on option pricing and capital structure. The SOA does not specify percentages, but only courses with rigorous treatment of these two subjects meet the VEE requirements. This course covers these subjects in depth, and the final exam tests these subjects more comprehensively than other subjects. If you review the practice problems and do the homework assignments, you will be able to answer the final exam questions.

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