

Learning Objectives for the Final Exam

- Understand the basic function of the financial industry.
- Understand different organizational forms of a firm and their pros and cons: sole proprietary, partnership, corporations.
- Understand what agency problems are and different ways to alleviate agency problems.
- Understand the basic financial decisions a firm needs to make: capital budgeting (investing decision), capital structure (financing decision), working capital management (asset management decision).
- Understand different types of financial instruments and their features: stock and bonds.
- Understand the difference between primary market and secondary market
- Be able to solve FV, PV, r , PMT, t for a single cash flow or a stream of cash flows (annuity, perpetuity or irregular cash flows)
- Be able to solve mortgage related issues
 - Mortgage payments
 - Amortization schedule
- Understand and calculate EAR and APR
- Understand different types of values: book value, market value, intrinsic value.
- Be able to calculate bond price
- Understand key relationships in bond valuation.
- Be able to calculate yield to maturity.
- Understand what a yield curve is and how to use it to price a bond.
- Understand different types of risks a bondholder has to bear.
 - Default risk, Interest rate risk, Liquidity risk, Inflation risk, Reinvestment risk, and etc.
- Be able to use different types of discounted dividend model.
- Be able to use PE model to calculate stock price.
- Understand the driving factors of stock prices.
- Be able to calculate different types of return
- Be able to define risk and calculate standard deviations
- Define and calculate Sharp ratio.
- Understand the risk and return tradeoff shown in the historical data
- Calculate expected return and risk of a portfolio.

- Have in-depth understanding of diversification benefit
- Understand the insights of CAPM
- Know how to measure systematic risk.
- Know how to calculate portfolio beta.
- Use CAPM to predict expected return for any stock.
- Define, calculate, and categorize (according to liquidity, financial leverage, coverage, activity, and profitability) the major financial ratios and understand what they can tell us about the firm.
 - Current ratio, acid-test (quick) ratio, debt-to-equity ratio, debt-to-total-assets ratio, long-term debt/total capitalization ratio, interest coverage ratio, receivable turnover ratio, average collection period, payable turnover ratio, payable turnover in days, inventory turnover ratio, total asset turnover ratio, gross profit margin, net profit margin, ROA (ROI), ROE, and etc..
- Understand the purpose of basic financial statements and their contents.
- Use ratios to analyze a firm's health and then recommend reasonable alternative courses of action to improve the health of the firm.
- Analyze a firm's return on investment (i.e., "earning power") and return on equity using a DuPont approach.
- Be able to describe and use the five capital budgeting techniques, including their calculation and acceptance criterion, advantages, and disadvantages:
 - The payback period (PBP)
 - Internal rate of return (IRR), net present value (NPV), and profitability index (PI).
- Understand why ranking project proposals on the basis of IRR, NPV, and PI methods may lead to conflicts in rankings.
- Be able to select a combination of projects when there is capital rationing.
- Be able to define capital budgeting and identify the steps involved in the capital budgeting process.
- Justify why cash flows, not net income are the most relevant to capital budgeting decisions.
- Understand the term "incremental cash flows" and why we focus on incremental cash flows rather than the raw amount of cash flows brought by a project:
 - Understand the major differences between a regular cash flow statement in accounting and free cash flow forecast in finance.
 - Define the terms "project externalities (flotation costs)", "sunk cost" and "opportunity cost" and explain why sunk costs must be ignored, while opportunity costs and project externalities must be included, in capital budgeting analysis.

- Explain and calculate how tax considerations (such as tax considerations related to depreciation and disposal of assets) affects capital budgeting cash flows.
 - Depreciation tax shield
 - Use different depreciation methods: MACRS and straight-line depreciation
- Calculate incremental cash flows for a project during the project life and the project NPV.
- Describe what sensitivity analysis and scenario analysis are.
- Understand and calculate accounting, cash flow, and financial break-even levels (in terms of both sales quantity and price) for a project
- Understand, calculate, and interpret degree of operating leverage (DOL) for a project.
- Understand and calculate information about probability tree:
 - NPV of a branch; expected NPV of the whole tree; conditional probability; joint probability
- Understand and calculate management option (real option) value.
- Understand the cost of debt/equity/capital.
- Calculate cost of equity for a firm using different methods (incl. Dividend Discount Model and CAPM) and describe the pros and cons of each method.
- Understand and calculate before-tax and after-tax cost of debt for a firm.
- Understand project-specific WACC and different methods to estimate it (incl. the pure play approach and subjective approach).
- Understand, calculate, and interpret DFL.
- Know what MM proposition I is and know why the MM proposition I holds in a perfect world.
- Understand and calculate the cost of capital for levered equity according to MM Proposition II.
- Understand the tax advantage of debt, calculate the interest tax shield for each year, calculate the present value of interest tax shield, and calculate after-tax WACC.
- Understand how to calculate firm value with debt.
- Describe the MM irrelevance proposition about cash retention policy in a perfect capital market.
- Discuss the benefit and costs for cash retention in an imperfect capital market.
- List two ways a company can distribute cash to its shareholders.
- Understand key dates related to dividend payment.
- Describe the MM dividend irrelevance proposition in a perfect capital market.

- Understand the effect of dividend payment or share repurchase on stock prices in a perfect world.
- Understand the frictions in the capital market that may affect firms' payout policy including the taxes, clientele effect, and information asymmetry.
- Understand dividend smoothing phenomenon (amount of dividend is stable over time).
- Understand the signaling effect of share repurchases and dividend policy.
- Define stock split and reverse stock split; describe the effect of those actions on stock price.