

FINC2011: Corporate Finance I (Theory)

Week 1: Introduction to Finance

Limited partnership has two types of owners:

1. General Partners: **Actively** manage bz (e.g. day-to-day), has **unlimited** liability.
2. Limited Partners **Not actively** manage bz. Has no management authority and can't legally be involved in the managerial decision making for the bz. Has **limited** liability.

Corporation (Limited Companies): A business organised as a separate legal entity owned by shareholders. Ownership is represented by no of shares held by a shareholder.

Adv & Disadv of Corporation: Limited liability, access to large capital market. More costly, heavily regulated.

Role of Financial Manager: Company Decisions

1. Investment Decisions: Activities that aim at generating revenue or to save costs. The process of evaluating such investments is capital budgeting.
2. Financing Decisions: How should firms raise money to fund investments? I.e. Capital structure policy focuses on a mix between debt (borrowed funds) and equity (ownership through shares/stocks).
3. Dividend Decisions: How firm pass on returns to shareholders: Buybacks and dividends.

Nature of Assets (Real vs Financial)

- Investment decisions involve the management of REAL assets that can be put to productive use to generate return e.g. machine, equipment.
- Financial and Dividend involve management of FINANCIAL assets, which can represent a claim to a series of cash flows against an economic unit.
- Remember Asset = Liability + Equity (aka market cap)

Corporate Objective of a Public Company: Max SH wealth, or to max market value of company's existing shares.

- Shareholder wealth is the current market value of shareholder's investment in the firm, aka equity.
- Shareholders are owners of public company and provide risk capital. They're arguably the most vulnerable stakeholder since they're residual claimers.

Maximising Shareholder Wealth

- To maximise shareholder value → Objective + Valuation = Decisions.
- Objective: Financial managers should only make corporate finance decisions that increase SH wealth.
- Valuation: Financial managers should only invest when return > minimum return required by investors.
- Stock price should increase if the proposed project offers higher return than what shareholders can earn elsewhere in the financial market (i.e. minimum return required by investors).

Agency Problems: Managers (the agent) may act in their own interest rather than in the best interest of the shareholders (the principal).

- Ex: Reduced managerial effort, inefficient investment policies (over/underinvestment), extraction of resources (excessive rewards and perks), earnings manipulation.

Agency Costs: Costs of the conflict of interest between the company's owners and its management.

How to Reduce Agency Costs? Align interests of management and SHs, management compensation, large SHs to actively monitor firm, hostile takeover, auditors.

Board of Directors Function: Monitor and advise the management on behalf of shareholders.

- Executive Directors (ED): They're usually the company's top executives.
- Non-Executives Directors (NED): Outside directors not part of company's day-to-day operations.
- Good directors have the "right" incentives: Independent and not affiliated to the management.

Equity-Based Management Compensation (*controversial*)

- + Alignment of interests with shareholders
- + Reduce manager's tendency to focus on short-term goals
- May provide incentives for managers to manipulate stock prices e.g. earnings management
- Stock option grants may encourage excessive risk-taking

Large Shareholders

1. Retail Investors: Individual investors (buy and sell securities for their personal accs).
2. Institutional/Professional Investors: Funds, investment banks, insurance bzs that invest money for others.

3. Superannuation Funds: Provide retirement benefits for their members.
4. Mutual Funds: Pools money from many investors (retail and institutional clients) and deliver returns.
5. Hedge Fund: Investment funds that employ customised and often aggressive strategies deemed riskier than typical investments. They are only open to large investors with \$\$\$ (i.e. Bridgewater).

Shareholder Theory vs Stakeholder Theory

- Traditional View: Shareholder Theory → Goal of financial manager is to max SH wealth since they're the owners of the firm.
- Alternative View: Stakeholder Theory (Freeman)
 - Sees business as a set of relationships between groups with a stake in a firm's activities.
 - The basic idea is that businesses, and the executives who manage them, actually do and should create value for customers, suppliers, employees, communities and financiers (or shareholders).
 - Management's goal is not to max shareholder wealth, but to create value for all stakeholders.

Week 3: Financial Mathematics II

Types of Interest Rates

1. Annual Percentage Rate (APR): Amt of simple interest earned in one year (w/o compounding). Usually nominal IR (inc inflation). Most used for IR, but it ignores compounding so it can't be used as a discount rate.
2. Effective Annual Rate (EAR): Total amt of interest earned at the end of one year (w/ compounding).
3. Equivalent n-periodic Rate (r): Appropriate disc rate for adjusting CFs.

Week 4: Debt Valuation

Debt Security Features

- Face Value (or Par): National amt of principal borrowed, the amt used to compute the interest payments, typically repaid at loan en, assume corporate bond value is \$1000 unless otherwise specified.
- Maturity: Final repayment date of bond, inc principal amt borrowed.
- Coupons: Interest payments on bond.
- Coupon Rate: Rate at which coupons are paid, as an APR.
- Yield to Maturity: Market required rate if return for bonds of similar risk and maturity. Discount rate used to value a bond that's quoted as an APR.

Zero-Coupon Bonds: Companies sometimes issue bonds with no coupon payment, only offering one payment at maturity. Zero coupon bonds sell well below their face value (at deep disc) bcs they offer no coupons.

Bond Yields

- Bond's YTM: Disc rate that makes PV of coupon and principal payments equal to bond price.
- It's yield earned by investor if bond is held to maturity, and all coupon and principal payments are made as promised.
- Bond's YTM changes daily as IR increases or decreases.

Bond Relationship I: Price & YTM

- Inverse relationship between the market's required YTM and bond prices.
 - As IR and bond yield increase, bond price decreases.
 - As IR and bond yield decreases, bond price increases.

Bond Relationship II: Coupon Rate vs YTM (BCR is bond coupon rate)

- $BCR = YTM$, bond sells at $P = FV$, aka par bonds.
- $BCR < YTM$, bond sells at $P < FV$, aka disc bonds.
- $BCR > YTM$, bond sells at $P > FV$, aka premium bonds.

Bond Relationship III: Effect of Time & Bond Price

- All bond prices converge to \$1000 as time to maturity reaches 0.
- Reflects principle that bond market value aligns with face value at maturity.
 - For Ex: 9% disc bond price increases over time to reach \$1000 at maturity.
 - For Ex: 15% premium bond price decreases over time to reach \$1000 at maturity.

Bond Risk Characteristics

Risk Characteristic I: Maturity

- For a given change in IR, LT bonds will change more (greater price volatility) than ST bonds.
 - LT bonds are riskier than ST bonds.
 - IR risk increases as maturity increases, but as a decreasing rate.

Risk Characteristic II: Coupon Payments

- For a given change in IR, prices of lower-coupon bonds change more than prices of higher-coupon bonds.
- The lower the bond's coupon rate, the greater the proportion of the bond's CF investors will receive at maturity.
- A given change in IR will have a greater impact on price of a low-coupon bond than on a higher-coupon bond with the same maturity.
- The lower a BCR, the greater its price volatility; hence, lower coupon bonds have greater IR risk.

Bond Theorem Applications

- If rates are expected to increase, portfolio managers should avoid investing in the long term and/or low-coupon bonds.
 - Could see a significant decrease in value.
- If an investor expects IR to drop, they may prefer to invest in low-coupon bonds.
 - As IR decreases, price of long-term zero-coupon bonds will increase more than any other bond.

Bond Ratings (Investment Grade Bond)

Investment Grade: AAA, AA+, AA, AA-, A+, A, A-, BBB+, BBB, BBB-

Junk Bonds: BB+ and below.

Credit Spread: Inc analysis (the worse the bond rating, the higher the credit spread etc).

Week 5: Equity Capital Market & Equity Valuation

Primary Market: Markets where corporations raise funds through new issue of shares.

- Initial Public Offering (IPO): Firms initially going public and listing shares to be publicly traded on stock market for the first time.
- Seasoned Equity Offering (SEO): New equity issued by already publicly traded company.

Secondary Market: Market that trades financial instruments once issued.

Intrinsic Value & Market Value

- Intrinsic Value (IV): True value.
- Market Value (MV): The consensus value of all market participants, which is represented by share price.
- Trading Recommendations: $IV > MV$ Buy | $IV < MV$ Sell or Short Sell | $IV = MV$ Fairly Priced

Limitations of DDM

- Uncertainty associated with:
 - Forecasting a firm's future earnings and dividends
 - Forecasting dividend growth rate at terminal period
 - Dividend payout policy is at management's discretion
- Small changes in the assumed dividend growth rate can lead to large changes in the estimated stock price.

Value Multiples (if time permits)

Valuation Based on Comparable Firms

- Method of Comparable: Estimate value of firm based on value of other comparable firms or investments that we expect will generate v similar cash flows and risk in the future.
- Valuation Multiple: Ratio of firm's value to some measure of the firm's scale or cash flow.
- Multiples need to be consistently applied across firms within industry when used for comparison purposes.

Limitations of Multiples

- No clear guidance about how to adjust for diffs in expected future growth rates, risk or in acctg policies.
- Comparables only provide info regarding the value of a firm relative to other firms in the comparison set.

Week 6: Dividend Payout Policy & Imputation Tax System

Dividend Policy

- Regular Dividends: An interim dividend halfway through the year and a final dividend at the end of year.
- Dividends are reported in three ways: DPS, Div Yield (DPS/Share Price), DPR (DPS/EPS)

Chronology of Cash Dividends: Declaration date, ex-dividend date, record date, payment date.

Dividend Policy

- Regular Dividend Policy: A company pays dividends at a consistent rate. The DPR quantifies the dividend policy decision by measuring the proportion of profits after tax paid out as dividends.
- Stable Dividend Policy: A company aims to pay a stable or slowly increasing dividend over time, even if earnings are volatile.

Regular Dividend Policy: Cutting a firm's dividend to increase investment will raise stock price if and only if new investments have a positive NPV. Based on DDM, the method to increase share price depends on the profitability of the firm's investments.

How DPR Influences Dividend Policy

- High DPR → Mature firms, fewer growth opportunities, more returns to shareholders.
- Low DPR → Firms that prioritise growth, reinvests earnings instead of paying dividends.
- Changes in DPR signal management's view on future earnings growth or contraction.

How Companies Decide Amt of Dividends Paid: Set LT target payout ratios, focus on change in divs, base dividends on forecast profits in the LR and reluctance to cut or change dividends.

Stable Dividend Policy - Lintner (1956)

- Gradual adjustment toward a target payout ratio based on LT sustainable earnings.
- Managers are reluctant to cut dividends; they prefer stability over ST fluctuations.

Constant Dividend Payout Ratio v Stable Dividend Policy

- Although constant DPR policy (assumption under DDM) is easy to use, it's not commonly adopted.
- It assumes dividend to fluctuate with earnings in the ST. Frequently changing dividend payment could send mixed signals to the market.
- Although managers do not actively maintain a constant DPR, it is still an important metric that guides managers in making dividend decisions.
- To investors, DPR signals this company's growth potential financial health.
- A stable div policy generally does not reflect ST volatility in earnings. Even if the earnings are temporarily decreased over the ST, the company is still expected to gradually increase its dividend.

Why Use DDM? Simple and cost effective. However, reliability of DDM decreases with highly unstable earnings and dividends + is unsuitable for companies with high growth that reinvest earnings rather than pay dividends.

Miller & Modigliani (1961) Dividend Irrelevance

- Dividend policy was irrelevant to shareholder wealth based on four assumptions: No transaction costs (in issuing or trading shares), no taxes, equal information.
- Sets assumptions under why it's irrelevant and by implication why it may be relevant to SH wealth.
- Assumptions are unlikely valid so dividend policy may matter.

M&M irrelevance proposition can be explained using the example of a company paying out all of its free CFs as dividends. If the company wants to increase dividends, it can either cut back on its investment in current projects or issue new shares to finance current projects to free up the cash needed to pay a higher dividend.

If the company issues new shares, the existing value of the company will be spread across a greater no of shares and the value of each share will fall. If it cuts back on existing projects, it generates sufficient cash to pay dividend. Hence share price falls. Either way, the increase in dividends will be offset by a decline in the price of shares, leaving shareholders no better or worse off.

Classic v Imputation Tax System

- Classical Tax System (US): Companies pay tax at the corp level on their income. SHs pay tax at their personal (marginal) rates on the dividends paid out.
- Imputation Tax System (AU): Companies pay tax at the corp level on their income. Dividends are paid out with franking credits, representing the amt of company tax that has already been paid. SHs pay tax at personal (marginal rates) on the sum of the cash dividend and franking credits (i.e. a grossed up dividend).

Franking Credit

- Tax credit passed on to investors by companies that have already paid corporate income tax in certain countries with a dividend imputation system.
- When a company pays dividends, those dividends are franked or marked as already been taxed on the corporate level. Shareholders not only receive the dividend amount but also a franking credit, which represents tax paid by the company. This credit can also be used by SHs when filing their own income tax returns to offset their own tax liabilities.
- This way, income is not taxed twice.

Week 7: Risk & Return

Portfolio Risks

- Measured by variability or dispersion of the portfolio return around its mean or expected value.
- When considering portfolio risk, it's necessary to look at both variability of returns from each investment and the relation between returns.

- Portfolio risk depends on variance of each asset, weight in each asset w_i , correlations between returns of assets in portfolio.
- Portfolio risk is related to the riskiness of the stocks and the degree of covar or correlation.

Covariance: Raw measure of the degree of association between two variables.

1. If the covar is positive, two returns tend to move in the same direction.
2. If the covar is negative, the two returns tend to move in opposite directions.

Correlation: A standardised measure of the relationship between two series.

Range for Correlation

- $p = +1 \rightarrow$ perfectly positively correlated. When one asset is up, the other is also up in perfect proportion.
- $p = -1 \rightarrow$ perfectly negatively correlated. Two assets move in opposite directions in perfect proportion.
- $p = 0$, returns on the two assets are unrelated.
- This provides a more interpretive measure of the strength of association between the securities, not just whether it's positive or negative.
- The lower the correlation, the greater the diversification benefit.

Gains from Diversification

- Risk reduction occurs by combining securities whose returns are less than perfectly positively correlated ($p_{i,j} < 1$).
- The greatest risk reduction is achieved when portfolio asset returns have a correlation of ($p_{i,j} = -1$).

Types of Risk & Diversification

Total Risk = Unsystematic Risk + Systematic Risk

1. Unsystematic Risk (Diversifiable Risk): This is the firm-specific risk due to such factors as management's actions, supply of RM, employee relations, regulations, etc. Can be eliminated to a large extent through portfolio diversification.
2. Systematic Risk (Undiversifiable/Market Risk): Caused by market factors: Changes in GNP, IRs, consumer expectations, purchasing power. Can't be reduced through diversification.

Limits to Diversification: The more assets in portfolio, portfolio variance lessens.

- In a portfolio of many assets, portfolio risk depends on covar between each pair of assets and not on the variances of each indiv asset. Thus, risk reduction benefits of diversification are maximised by constructing portfolios from assets that have the lowest possible pairwise correlation.
- However, it doesn't decrease down to zero, there's some risk that can't be diversified away.

Week 8: Efficient Portfolio & CAPM

Combining A Risk-Free Investment & Risky Portfolio

- Introduction of a risk-free asset ($\sigma = 0$) expands risk return opportunities available for investment. New sets of feasible portfolios now exist.
- The risk-free asset has no risk, SD is zero and is not correlated with any risky asset.
- Each of the new sets of feasible portfolios is represented by a straight-line from the risk-free asset to a portfolio on the efficient frontier, aka the capital allocation line (CAL).

Identifying Optimal Risky Portfolio

- To earn the highest possible expected return for any level of volatility, find the portfolio generating the steepest possible line when combined with the risk-free investment.
- The portfolio that generates this tangent line is known as the optimal risky portfolio, aka tangent portfolio.
- Tangent portfolio is efficient.
- Every investor should invest in the tangent portfolio independent of his or her taste for risk.

Combined Portfolio: Includes risk-free investment and risky portfolio. Aka complete portfolio.

Long & Short Positions

- Long Position: Positive investment in a security ($w_{\text{long}} > 0$).
- Short Position: Neg investment in a security ($w_{\text{short}} < 0$).
 - In a short sale, you sell a stock you don't own and then buy that stock back in the future.
 - Short selling is an advantageous strategy if you expect a stock price to decline in the future.
- Buying Stocks on Margin (borrowing money to invest): Usually involves a short position on other assets (e.g. risk-free assets).