Financial Management

Lecture 1 Introduction

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Road Map

- Part A: Introduction of Financial Management
  - Objective of manager and role of financial markets
  - Given cash flows and discount rates, finding present value
- Part B: Valuation of Financial Securities
- Part C: Analysis of the determination of risk-adjusted discount rates
- Part D: Analyze how a firm's financial decisions affect its value

Motivating Question 1

- Deciding on long-lived project for short-lived owner:
  - You are a financial manager of a firm that is owned entirely by a single individual.
  - Your assistant has identified a new project
  - The project required an invest today of $1M, and ten years from now it will give back $100M.
- How do you decide whether or not to invest in this project?
- Suppose you conclude that the project is a very profitable one. However, the owner does not want you to invest in it because she is not sure if she will be alive for another 10 years. What should you tell the owner?

Motivation Question 2

- Deciding on a risky project for owners with diverse risk aversion
  - You are still the financial manager of same firm, but the old owner has died and the firm has been inherited by the two children: a son and a daughter (each gets 50% of shares)
  - The son is called Meek Smith, and the daughter is called Take-A-Chance Smith, and the name describe their attitudes toward taking risk
  - A risky project has been identified: it requires an investment today of $10M, and next year it will have a payoff of either $100M or 0
- When you ask the owners, Meek says that the project is too risky and should not be accepted, while Take-A-Chance says: "Let's do it!"
- What should you tell the owners?
- How can the disagreements between shareholders be resolved?

Key Concepts

- Corporate Finance
  - The corporate
  - Cash flow between Investors and Firms
  - Role of The Financial Manager
  - Financial Markets
- Valuation of Investment
  - Two important Characteristics of Cash Flows
  - Opportunity Cost of Capital
  - Net Present Value and Investment Rules
- Role of Financial Markets
- Objective of Financial Manager

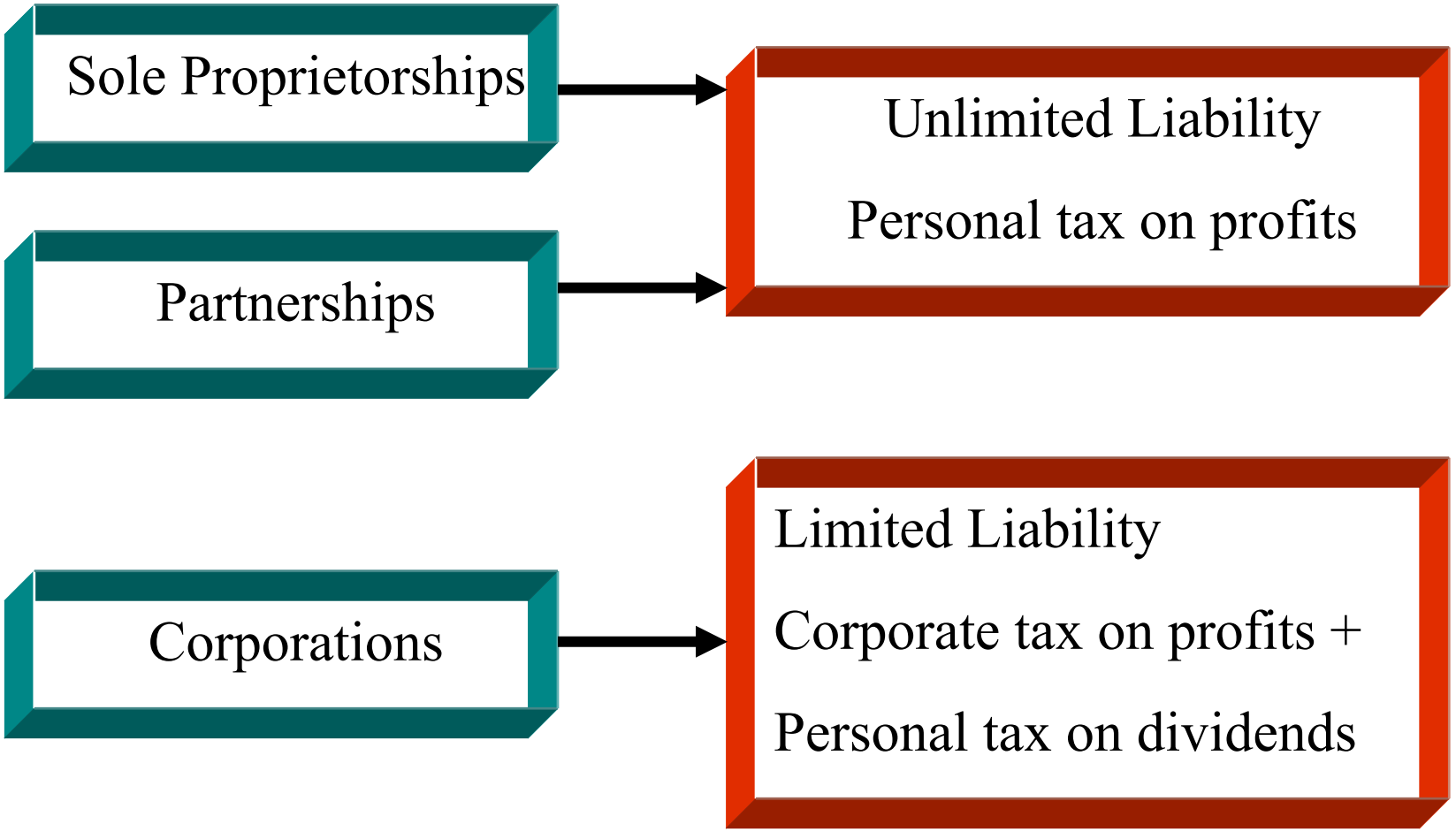
Alternative Forms of Business Organization

- Sole proprietorship
  - Advantages:
    - Ease of formation
    - Subject to few regulations
    - No corporate income taxes
  - Disadvantages:
    - Limited life
    - Unlimited liability
    - Difficult to raise capital
- Partnership
  - A partnership has roughly the same advantages and disadvantages as a sole proprietorship.
- Corporation

Corporation

- Advantages:
  - Unlimited life
  - Easy transfer of ownership
  - Limited liability
  - Ease of raising capital
- Disadvantages:
  - Double taxation
  - Cost of set-up and report filing
- Difficult to Define:
  - Separation of Management and Ownership

Corporate Structure



Goals of the Corporation

- The primary goal is shareholder wealth maximization, which translates to maximizing stock price.
  - Should firms behave ethically? YES!
  - Do firms have any responsibilities to society at large? YES! Shareholders are also members of society.

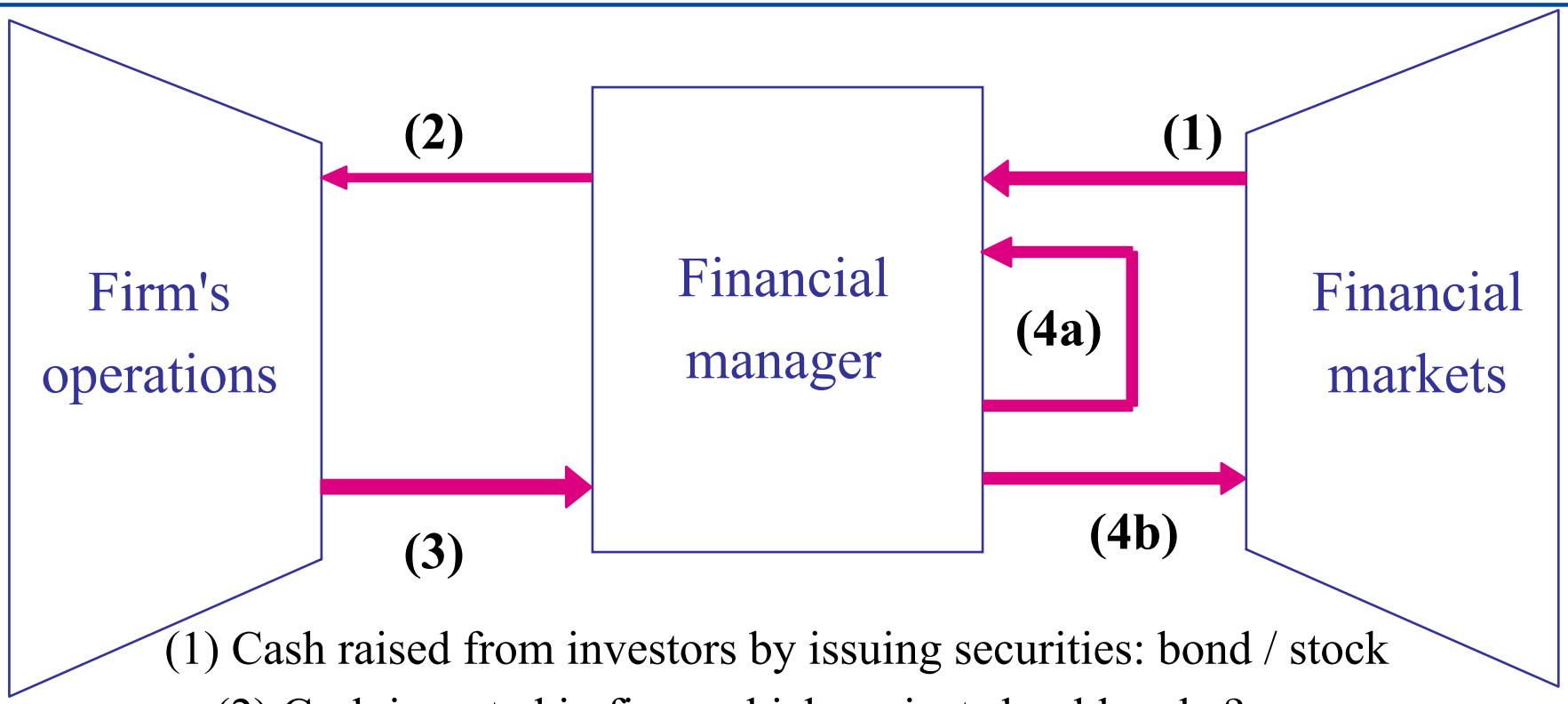
Course Objective

- The objective: provide you with an understanding of the basic theory and the tools necessary to make good financial decisions.
- Finance is really about *value*
  - Firms
  - Projects and real investments
  - Securities
- Central question
  - How can we create value through investment and financing decisions?

What Does Finance Do?

- Finance answers questions like:
  - How can corporations get money? At what price?
  - Should corporations get money? For what kinds of projects?
  - What is security (like stock) and how should we think of them?
  - What's a derivative (option, and the hot word, CDS)?
  - What is some of this stuff in the WSJ?
  - ……
- Finance is a hybrid of:
  - Economics (The science of choosing among tradeoffs)
  - Statistics (The science of dealing with uncertainty)
  - Accounting (The language of business)

Corporate Finance Focus on the Flow of Cash Between Financial Markets And Firm Operations



(1) Cash raised from investors by issuing securities: bond / stock

(2) Cash invested in firm: which project should make?
What do you think about the risk of the project?

(3) Cash generated by operations: the results from the investment decision

(4a) Cash reinvested vs. (4b) Cash returned to investors vs. reinvestment:
Which could create more value to shareholder?

Task of Financial Manager

- Action: Decide/Plan/Manage Cash Flow (1), (2), (3), (4)
  - Investment Decision: (2) ⟹ (3)
    - ➢Need to know how real assets are valued
  - Financing Decision: (1), (4)
    - ➢Need to know how corporate securities are valued
  - Dividend Policy: (4)b
    - ➢Need to know how common stocks are valued
- Objective: Create value for shareholders
  - We have to understand how financial markets determine value of real assets and financial assets

Real Assets vs. Financial Assets

- What do they own: real assets or financial assets?
- Corporations
  - Mostly real assets
- Financial Services Industry
  - Banks, Insurance companies, Mutual Funds, etc.
  - Mostly financial assets
- Households
  - Both real and financial assets

Financial Markets

- Financial Markets: financial assets are traded
  - Money markets: debt securities with maturities up to 1 year
    - Treasury bills, commercial paper
    - currencies
  - Capital markets: other securities
    - Stocks
    - Government debt (Treasury notes and Treasury bonds)
    - Corporate debt
  - Derivatives
    - Options
    - Forward and Futures
    - Swaps, etc.

Valuation of Investment

- An Investment ⟺ A Cash Flow

Time:	0	1	2	…
Cash Out	CF_0			
Cash In		CF_1	CF_2	…
Net Cash Flow	CF_0	CF_1	CF_2	…

- Value of Investment = Value of Its Cash Flow = PV ({CF_0, CF_1, CF_2, …… })

Two Important Characteristics of Cash Flows

- Time: time value of money
  - Example: $1,000 now vs. $1,000 next year
- Uncertainty: risk and return
  - Example: $1,000 for sure vs. $0 and $2,000 with equal odds

Opportunity Cost of Capital

- Observation: Capital Investment Trade-off:
  - A firm can always give cash back to share holders
  - A shareholder can invest in financial markets
- Definition: Opportunity cost of capital is the expected rate of return offered by equivalent investments in financial markets.
  - Equivalence means cash flows match in terms of:
    - Timing
    - Risk

Role of Financial Markets

- Function of financial markets:
- Allocating resources
  - Transfer resources across time
  - Transfer resources across different states of economy
- Communicating information
  - Market prices reflect available information

Example: Allocating Resources Across Time

- Consider an individual who lives for two dates: now ($t=0$) and later ($t=1$)
  - She is endowed with \$100 now and \$25 later
  - Her happiness (utility) depends on her consumption, c_0 and c_1, as follows:

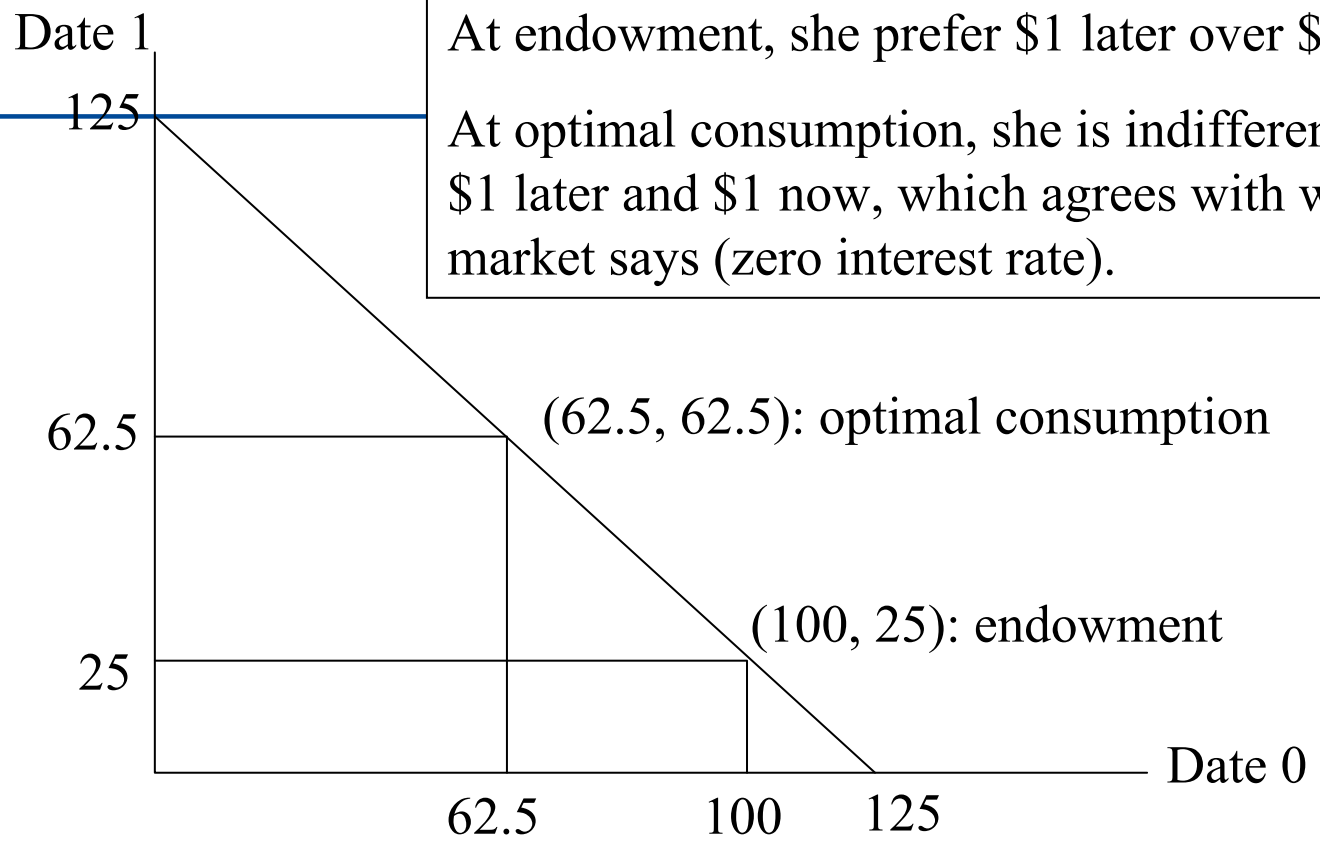
$$u(c_0, c_1) = 0.5\sqrt{c_0} + 0.5\sqrt{c_1}$$

  - There is a borrowing /lending market with zero interest rate.
- Without the loan market, she consumes her endowments: c_0=100 and c_1= 25. Her utility is

$$u(c_0, c_1) = 0.5\sqrt{100} + 0.5\sqrt{25} = 7.5$$

- With the loan market, she lends \$37.5 now and receives \$37.5 later. Her consumption is: c_0=62.5 and c_1= 62.5 and her utility is

$$u(c_0, c_1) = 0.5\sqrt{62.5} + 0.5\sqrt{62.5} = 7.9$$



At endowment, she prefer $1 later over $1 now.

At optimal consumption, she is indifferent between $1 later and $1 now, which agrees with what market says (zero interest rate).

Observations:

1. The market allows agent to transfer resources over time.
2. At the margin, agent agree on the time value of money, which is the market interest rate.

Example: Allocating Resources Across Different States

- Consider an individual who lives for two dates: now ($t=0$) and later ($t=1$). At $t=1$, the economy can be instate a or b with equal odds.
  - She is endowed with \$100 in state a and \$25 in state b.
  - Her happiness (utility) depends on her consumption in the two possible states c_a and c_b, as follows:

$$u(c_a, c_b) = 0.5\sqrt{c_a} + 0.5\sqrt{c_b}$$

  - There is a financial market where the price of a security that pays \$1 only if state a occurs (a state-contingent claim) is the same as that of a security that pays \$1 only if state b occurs.
- Without the securities market, she consumes her endowments: $c_a=100$ and $c_b=25$. Her utility is

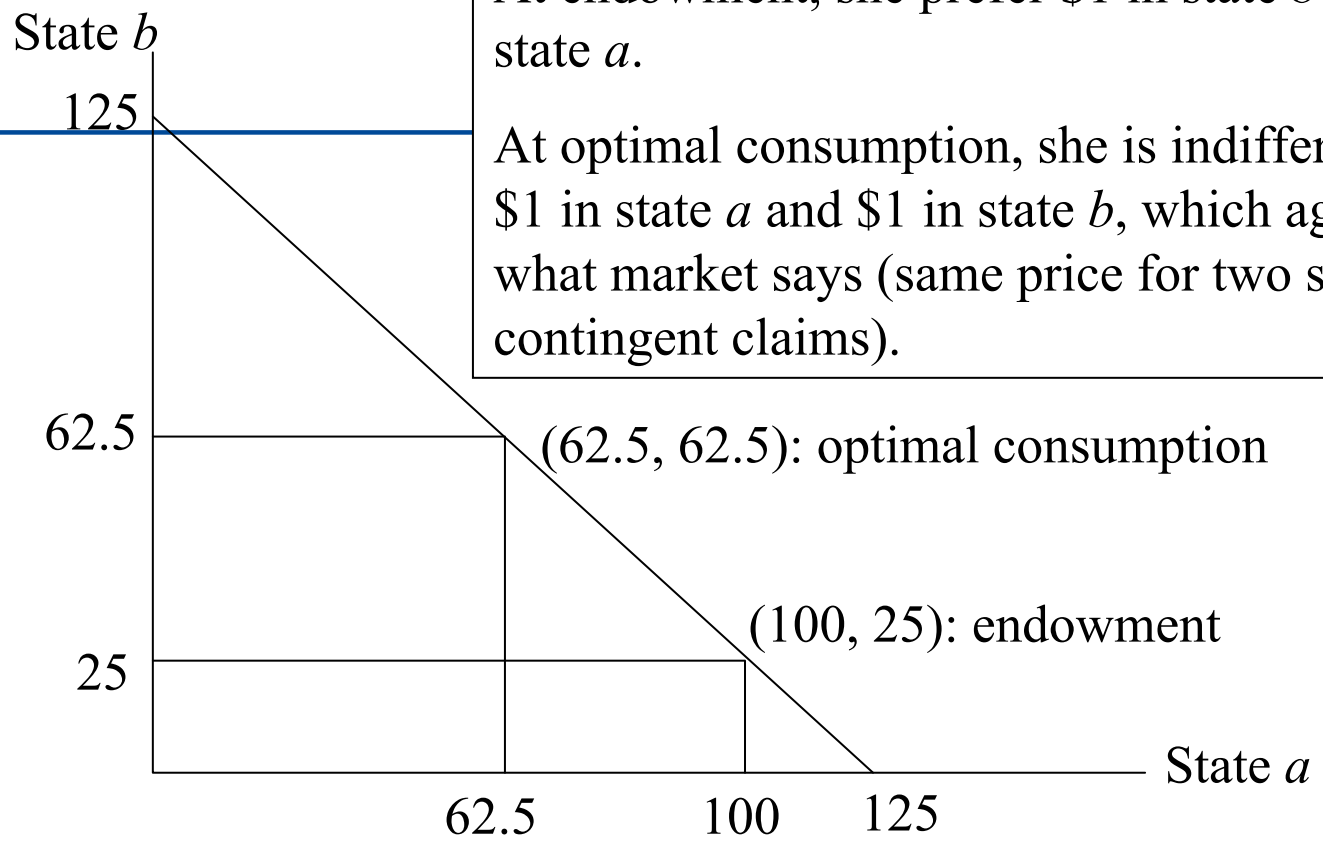
$$u(c_a, c_b) = 0.5\sqrt{100} + 0.5\sqrt{25} = 7.5$$

- With the security market, she sells 37.5 units of state-a contingent claim and for 37.5 units of state-b contingent claim. Her consumption is: $c_a=62.5$ and $c_b=62.5$, with utility

$$u(c_a, c_b) = 0.5\sqrt{62.5} + 0.5\sqrt{62.5} = 7.9$$

At endowment, she prefer \$1 in state *b* over \$1 in state *a*.

At optimal consumption, she is indifferent between \$1 in state *a* and \$1 in state *b*, which agrees with what market says (same price for two state-contingent claims).



Observations:

1. Financial market allows agent to transfer resources across different states of economy.
2. At the margin, agent agree on the relative value of money in different states, which is the market price in different state contingent claims.

Assumptions of Financial Markets

- Existence of "perfect" financial markets
  - A rich set of securities traded
  - Competitive markets
  - No frictions
  - Etc.
- Free access to financial markets

Objectives of Financial Manager

Maximize current market value of (shareholders' claims on) the firm

- Maximizing current market value is the only plausible financial objective
  - Timing? Risk? Accounting? Long-run value?
- Current, market value incorporates present value of all current and future cash flows, adjusted for timing and risk.
- Market value rule is independent of shareholders differences.

The Case for Value Maximization

- Shareholders' financial objectives:
  - Increased wealth
  - Right pattern of consumption
  - Right balance of expected future consumption and risk
- Shareholders can do the 2nd and 3rd on their own, through financial markets.
- Financial manager can help only with the 1st objective, by increasing firm's marketing value, i.e., shareholders' wealth.

Financial Managers and Firm Value

- Conclusion:
  - Financial managers should maximize firm's current market value.
  - Shareholder differences can be settled in financial markets by trading on their own account.
  - Perfect financial markets allows separation of ownership and management of firm.
- Practical Issues:
  - Agency Problems: management may put their own interest first.
  - How about other stakeholders
  - Imperfections in financial markets

Discussion

- Is maximizing stock price good for society, employees, and customers?

Agency Relationships

- An agency relationship exists whenever a principal hires an agent to act on his or her behalf.
- Within a corporation, agency relationships exist between:
  - Shareholders and managers
  - Shareholders and creditors

Ownership vs. Management

Difference in Information

- Stock prices and returns
- Issues of shares and other securities
- Dividends
- Financing

Different Objectives

- Managers vs. stockholders
- Top mgmt vs. operating mgmt
- Stockholders vs. banks and lenders

Shareholders versus Managers

- Managers are naturally inclined to act in their own best interests.
- But the following factors affect managerial behavior:
  - Managerial compensation plans
  - Direct intervention by shareholders
  - The threat of firing
  - The threat of takeover

Shareholders versus Creditors

- Shareholders (through managers) could take actions to maximize stock price that are detrimental to creditors.
- In the long run, such actions will raise the cost of debt and ultimately lower stock price.

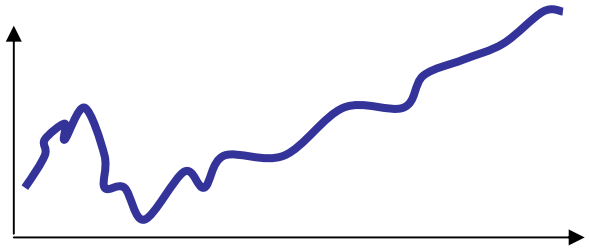
Summary

- Key Points:
  - Three forms of organizations
  - Corporation: Separation of management and ownership
  - Two important characteristics of Cash Flows: timing and risk
  - Role of financial markets: allow agent to choose timing and risk, subject only to wealth constraint.
  - Objective of financial manager: maximize firm's current market value (increase shareholders' wealth)
- Key Assumptions:
  - "Perfect" financial markets
  - No agency problems.

Course Overview/Schedule

I. Introduction

- What is Finance
- The Basic Points of Valuation

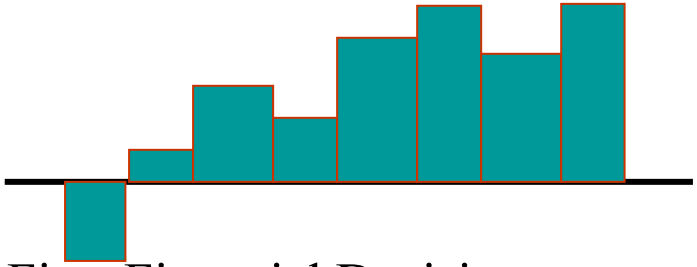


II. Security Valuation

- Stock
- Bond

III. Risk and Return

- How do we value the risk for:
  - A Portfolio
  - A Stock
  - A project



IV. Firm Financial Decision

- How to find the project that can create value?
- What is the optimal capital structure for the firm?

Course Requirements

- Prerequisite
  - Financial Accounting
  - Economics
  - Statistics
- Readings
  - Brealey, Myers and Allen: Principle of Corporate Finance
  - Class Notes
  - Reading Packet and Assignment
- Grades
  - Class participation 20%
  - Home Assignments 20%
  - Final exam 60%