Introduction

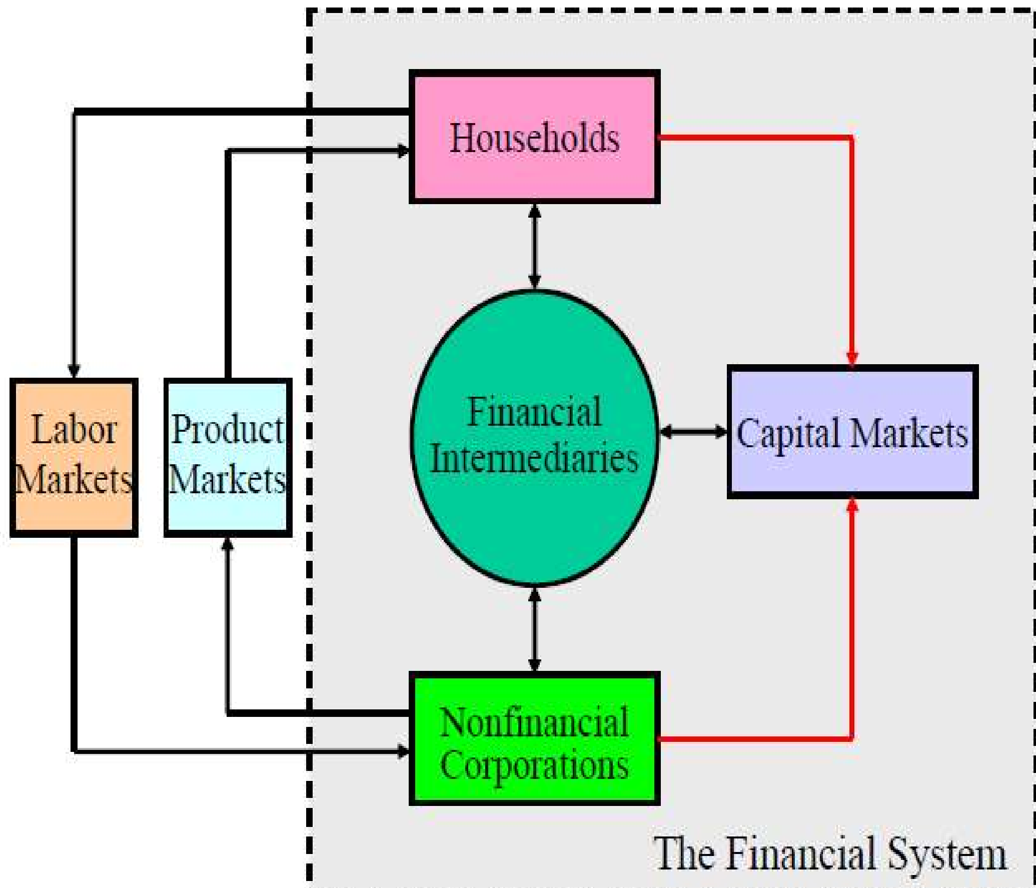
What is Finance?

- Money management: Finance is the systematic and disciplined study of financial transactions of money.
- Allocation of assets and liabilities: Finance is about the bottom line of business activities; prerequisite for success in business.
- Pricing of assets.

- Every business is a process of acquiring and disposing assets:
  – Real assets (tangible and intangible).
  – Financial assets.
- Two objectives of business:
  – Grow wealth.
  – Use wealth (assets) to best meet economic needs.

Financial system

- There are five components that comprise the financial system.
  - Households, financial intermediaries, non-financial corporations, goods market, and capital markets.
- Financial analysis applies to all of these components in exactly the same way with different applications.



Fundamental Challenges of Finance

- All business decisions involves two aspects of financial analysis
  I. **Valuation of assets**
  II. **Management of assets**

- Business decisions involve valuation and management
  - Valuation is the starting point for management
  - Once value is established, select the decision that is the most valuable for achieving the objectives

    Objectives + Valuations $\Rightarrow$Decisions

- Both the valuation and management applies to both personal and corporate financial decisions or to avoid and how?

- **Valuation**
  - To make sound financial decisions, we need to know how to value assets.

  – How are financial assets valued?
  – How should financial assets be valued?
  – How do financial markets determine asset prices?
  – How well do financial markets work?

- **Management**
  - How much should I save/spend?
  - What should I buy/sell?
  - When should I buy/sell?
  - How should I finance the transaction?

Role of financial markets and the "price discovery" process

- How the financial markets helps us to establish value through the "price discovery" mechanism?
- Prices of financial instruments are determined in equilibrium by demand and supply forces.
- They reflect market expectations regarding the future as inferred from currently available information.

Questions to answer in this course

1. How financial markets determine asset prices?
2. How corporations make **financial decisions**?
   - Investments:
     - What projects to invest in?
   - Financing:
     - How to finance a project?
   - Payout:
     - What to pay back to shareholders?
   - Risk management:
     - What risk to take or to avoid and how?

Valuation of Assets

- Each asset is defined by its cash flow (CF).

- Value of an asset = Value of its cash flow.
- Important characteristics of a cash flow
  1. Time: time value of money.

     Example. $1,000 today vs. $1,000 next year.
  2. Risk: risk premium.

     Example. $1,000 for sure vs. $0 and $2,000 with equal odds.

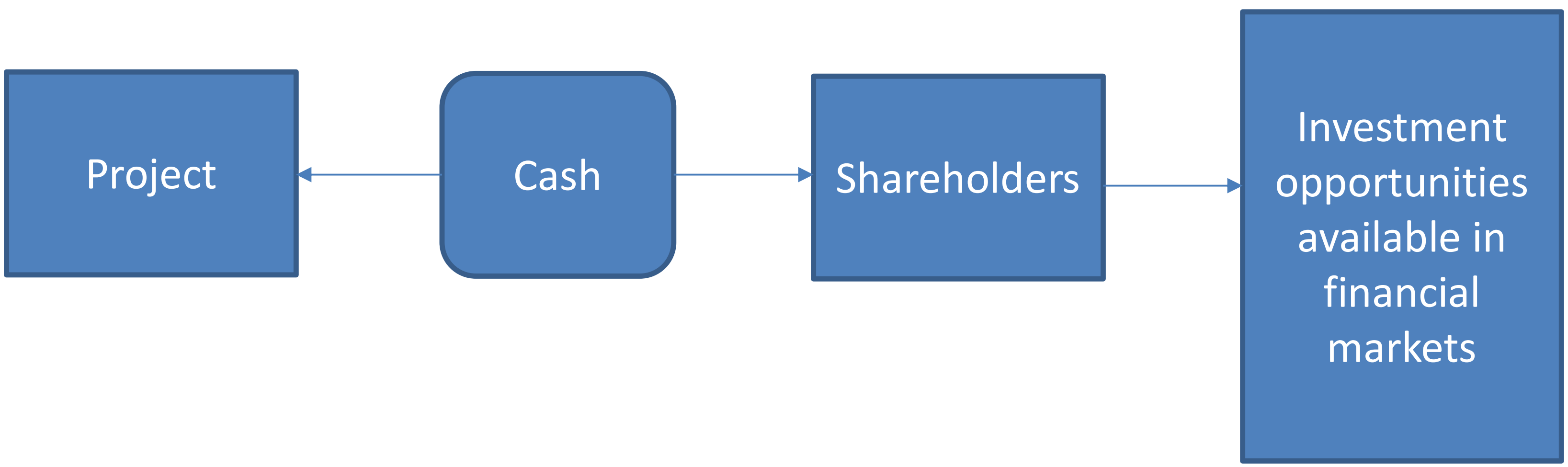
Time and Risk

- Factors that make finance challenging
  1. **Time:** The time of its revelation
     - Cash flows now are different from cash flows later
     - Time flows in only one direction
     - How should we model temporal differences?

  2. **Risk:** The nature of its randomness
     - Under perfect certainty, finance theory is complete
     - How can one distinguish between different classes, or categories, of risky cash flows?
     - How should we model the unknown?

Opportunity Cost of Capital

- Opportunity cost of capital is the expected rate of return offered by equivalent investments in financial markets.
- An investment is an acquisition of an asset:
  - Pay cash today.
  - Receive cash flow in the future.
- Capital investment trade-off:
  1. A firm can always give cash back to shareholders.
  2. A shareholder can invest in financial markets.



The Framework of Financial Analysis

- **Accounting**
  - The language of finance

- **Balance Sheet and Income Statement Perspectives**
  - Balance sheet: snapshot of financial status or wealth of a company

Balance Sheet of a firm

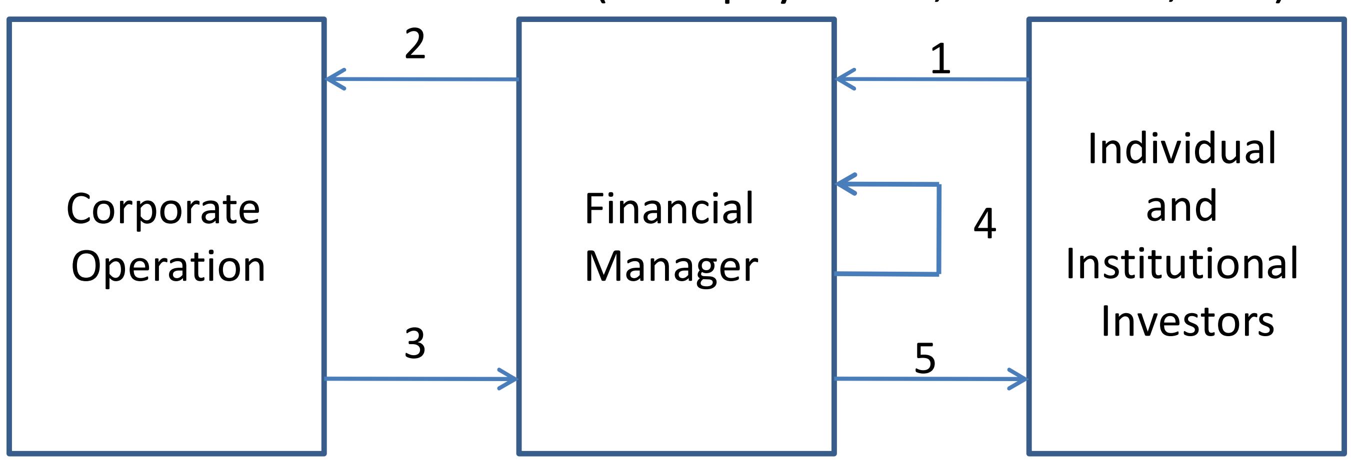
Current Assets	Current Liabilities
	Long-Term Debt
Fixed Assets 1. Tangible 2. Intangible	Shareholders' Equity

- Income statement: tells the sources of funds, and the uses of funds over any time period. How much the company is making per unit time versus its losses.
- The sources of funds originate from:
  - A decrease in liabilities or an increase in assets
  - Net income after tax
  - Proceeds of loans obtained
  - Proceeds of shares that were issued
  - Any increase in net working capital
- The application of funds includes:
  - The purchase of fixed assets/investments
  - The full or partial payment of loans
  - Granting of loans
  - Liability for taxes
  - Dividends paid or proposed
  - Any decrease in net working capital

Cash Flow of A Firm

- **Corporate financial decisions**
  - As a corporate financial officer you are focused on cash, the flow of cash.

1. Cash raised from investors (selling financial assets)
2. Cash invested in real assets (tangible and intangible)
3. Cash generated by operations
4. Cash reinvested
5. Cash returned to investors (debt payments, dividends, etc.)



Role of Financial Manager

- Management perspective
  - Real Investment: 2, 3
  - Financing: 1, 4
  - Payout: 5
  - Risk management: 1, 5
- Coordinating with other departments/divisions
- Dealing with financial markets
- Forecasting and planning of firms’ financial needs

- Central question
  - How can we create value through investment and financing decisions?

Objective: create and maximize shareholder value

- But he/she also need to understand …
  - **Capital markets**
    - How securities (stocks, bonds, options, …) are traded pricing risk and return, market efficiency, international markets
  - **Strategic considerations**
    - Positioning: Does the acquisition generate competitive advantages?
    - Sustainability: Are the competitive advantages sustainable through time?

The goal of financial management

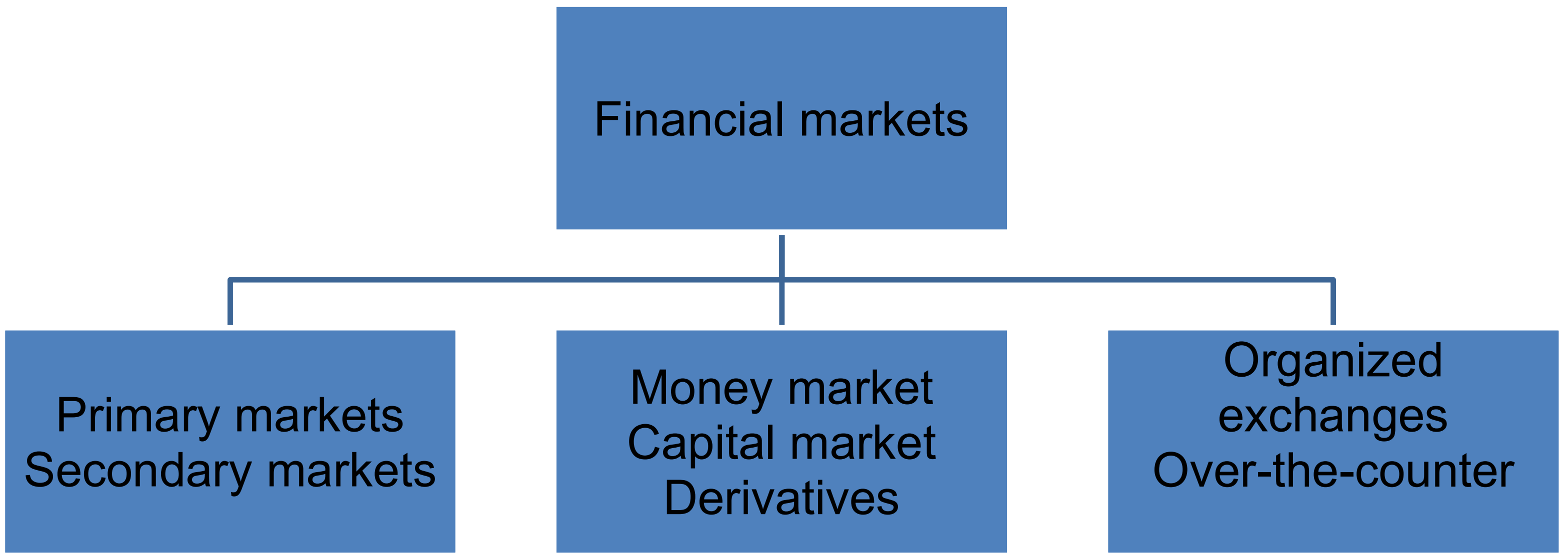
- Goal of financial management
  - **Maximizing shareholder's wealth**
  - **Maximize current market value of the firm (as measured by share prices).**

    where current market value incorporates present value of all current and future cash flows, adjusted for timing and risk.

- Objectives for financial manager
  - Maximizing earnings and earnings growth.
  - Maximizing return on investments and return on equity.

Financial markets

- Financial Markets - where financial assets are traded



Primary and secondary markets

- **Primary market** – primary issues of securities are sold, allows governments, banks, corporations to raise money by directly selling financial instruments to the public.
- **Secondary market** – allows investors to trade financial instruments between themselves. Secondary transactions take place.

Money and capital markets

- **Money markets** – short-term assets (maturity less than 1 year) are traded:
  - Short-term government debt (Treasury bills, *. . .)*
  - **Short-term bank and corporate debt (CDs, CPs, *. . .)***

- **Capital markets** – long-term assets (maturity longer than 1 year) are traded:
  - Stocks
  - Corporate bonds
  - Long-term government bonds

- **Derivatives:** Securities with payoffs tied to other prices
  - Forwards and futures
  - Options, *. . .*

Organized exchanges and over-the-counter

- **Organized exchange** – most of stocks, bonds and derivatives are traded. Has a trading floor where floor traders execute transactions in the secondary market for their clients.
- **Over-the-counter (OTC)** market- Stocks not listed on the organized exchanges are traded in the **OTC** market.
  - Facilitates secondary market transactions.
  - Unlike the organized exchanges, the OTC market doesn’t have a trading floor.
  - The buy and sell orders are completed through a telecommunications network.

- **Financial Intermediaries** - Own mostly financial assets
  - Banks
  - Insurance companies
  - Savings and loan institutions
  - Mutual funds, . . .
- **Corporations** - Own mostly real assets
- **Individuals** - Own both real and financial assets.

Functions of Financial Markets

1. Allocating resources:
   - Across time.
     - Example – Borrow money to buy a home.
   - Across different states of economy.
     - Example – Invest in stocks/bonds.
2. Communicating information.
   - Market prices reflect available information.

- Assumptions on financial markets – A “perfect” financial market:
  - A rich set of securities traded.
  - Free access.
  - Competitive trading process.
  - No frictions.

Forms of Business Organization

- Three major forms
  - Sole proprietorship
  - Partnership
    - General
    - Limited
  - Corporation
    - S-Corp
    - Limited liability company

Sole Proprietorship

- It is a business owned by a single individual that is entitled to all the firm's profits and is responsible for all the firm's debt.
- There is no separation between the business and the owner when it comes to debts or being sued.
- Sole proprietorships are generally financed by personal loans from family and friends and business loans from banks.

Advantages
- Easiest to start
- Least regulated
- Single owner keeps all of the profits
- Taxed once as personal income

Disadvantages
- Limited to life of owner
- Equity capital limited to owner's personal wealth
- Unlimited liability
- Difficult to sell ownership interest

Partnership

- A partnership is an association of two or more persons who come together as co-owners for the purpose of operating a business for profit.
- There is no separation between the partnership and the owners with respect to debts or being sued.
- In **limited partnerships**, there are two classes of partners: general and limited.
- The general partners runs the business and face unlimited liability for the firm's debts, while the limited partners are only liable on the amount invested.
- General partners usually assume full management control of the entity. Limited partners may have some involvement in management and advisory but are usually just interested in a return on their investment.
- One of the drawback of this form is that it is difficult to transfer the ownership of the general partner.

- Advantages
  - Two or more owners
  - More capital available
  - Relatively easy to start
  - Income taxed once as personal income
- Disadvantages
  - Unlimited liability
    - General partnership
    - Limited partnership
  - Partnership dissolves when one partner dies or wishes to sell
  - Difficult to transfer ownership

Corporation

- Corporation is “an artificial being, invisible, intangible, and existing only in the contemplation of the law.”
- Corporation can individually sue and be sued, purchase, sell or own property, and its personnel are subject to criminal punishment for crimes committed in the name of the corporation.
- Corporation is legally owned by its current stockholders.
- The Board of directors are elected by the firm’s shareholders. One responsibility of the board of directors is to appoint the senior management of the firm.

- Advantages
  - Limited liability
  - Unlimited life
  - Separation of ownership and management
  - Transfer of ownership is easy
  - Easier to raise capital
- Disadvantages
  - Separation of ownership and management (agency problem)
  - Double taxation (income taxed at the corporate rate and then dividends taxed at personal rate, while dividends paid are not tax deductible)

Limited liability company (LLC)

- Limited liability company (LLC) combines the tax benefits of a partnership (no double taxation of earnings) and limited liability benefit of corporation (the owner’s liability is limited to what they invest).

The Agency Problem

- Agency relationship
  - Principal hires an agent to represent its interests
  - Stockholders (principals) hire managers (agents) to run the company

- Agency problems: Conflict of interest between principal and agent
  - Management may put their own interest first.
  - Different stakeholders may have conflicting interests.
    - Examples: – Not pursuing risky project for fear of losing jobs, stealing, expensive perks.
- All else equal, agency problems will reduce the firm value.

How to Reduce Agency Problems?

1. Monitoring (Examples: Reports, Meetings, Auditors, board of directors, financial markets, bankers, credit agencies)
2. Compensation plans (Examples: Performance based bonus, salary, stock options, benefits)
3. Others (Examples: Threat of being fired, Threat of takeovers, Stock market, regulations)

- The above will help to reduce agency problems/costs.

Six fundamental principles of finance

1. There is no such thing as a free lunch

2. Other things equal, individuals :
    - Prefer more money to less (non-satiation)
    - Prefer money now to later (impatience)
    - Prefer to avoid risk (risk aversion)

3. All agents act to further their own self-interest

4. Financial Market Prices Shift to Equalize Supply and Demand

5. Financial Markets Are Highly Adaptive and Competitive

6. Risk-Sharing and Frictions Are Central to Financial Innovation

- Text Book: Principles of Corporate Finance by Brealey, Myers and Allen