香港中文大學(深圳)
The Chinese University of Hong Kong, Shenzhen
经管學院
School of Management and Economics

Chapter 2.

The Business, Tax, and Financial Environments

Quick Review of Lecture 1

- **Three functions of a financial manager?**
- **Goal of a firm?**

After studying Chapter 2, you should be able to:

1. **Describe the four basic forms of business organization in the United States – and the advantages and disadvantages of each.**
2. **Understand how to calculate a corporation's taxable income and how to determine the corporate tax rate - both average and marginal.**
3. **Understand various methods of depreciation.**
4. **Understand why acquiring assets through the use of debt financing offers a tax advantage over both common and preferred stock financing.**
5. **Describe the purpose and players of financial markets.**
6. **Demonstrate an understanding of how letter ratings of the major rating agencies help you to judge a security's default risk.**
7. **Understand what is meant by the term "term structure of interest rates" and relate it to a "yield curve."**

The Business Environment

The US has four basic forms of business organization:

- **Sole Proprietorships**
- **Partnerships (general and limited)**
- **Corporations**
- **Limited liability companies**

The Business Environment

Sole Proprietorship **– A business form for which there is one owner (self-employment). This single owner has unlimited liability for all debts of the firm.**

- **Oldest form of business organization.**
- **Business income is accounted for on your *personal income tax form*.**

Summary for Sole Proprietorship

Advantages

- **Simplicity**
- **Low setup cost**
- **Quick setup**
- **Single tax filing on individual form**

Disadvantages

- **Unlimited liability**
- **Hard to raise additional capital**
- **Transfer of ownership difficulties**

The Business Environment

Partnership **– A business form in which two or more individuals act as owners.**

- **Business income is accounted for on each partner's *personal income tax form*.**

Types of Partnerships

General Partnership **– all partners have *unlimited liability* and are liable for all obligations of the partnership.**

Limited Partnership **– limited partners have *liability limited* to their capital contribution (investors only).**

At least one general partner is required and all general partners have unlimited liability.

Summary for Partnership

Advantages

- Can be simple
- Low setup cost, higher than sole proprietorship
- Relatively quick setup
- Limited liability for limited partners

Disadvantages

- Unlimited liability for the general partner
- Difficult to raise additional capital, but easier than sole proprietorship
- Transfer of ownership difficulties

The Business Environment

Corporation **– A business form legally separate from its owners.**

- **An artificial entity that can own assets and incur liabilities.**
- **Business income is accounted for on the *income tax form of the corporation*.**

Summary for Corporation

Advantages

- Limited liability
- Easy transfer of ownership
- Unlimited life
- Easier to raise large quantities of capital

Disadvantages

- Double taxation
- More difficult to establish
- More expensive to set up and maintain

The Business Environment

Limited Liability Companies **– A business form that provides its owners (called "members") with corporate-style limited personal liability and the federal-tax treatment of a partnership.**

- **Business income is accounted for on each "member's" *individual income tax form*.**

Summary for LLC

Advantages

- Limited liability
- Eliminates double taxation
- No restriction on number or type of owners
- Easier to raise additional capital

Disadvantages

- Limited life (generally)
- Transfer of ownership difficulties (generally)

Corporate Income Taxes

Corp. Taxable Income		Tax	
At Least	But <	Rate	Tax Calculation
$ 0	$ 50,000	15%	0.15x(Inc > 0)
50,000	75,000	25%	$ 7,500 + 0.25x(Inc > 50,000)
75,000	100,000	34%	13,750 + 0.34x(Inc > 75,000)
100,000	335,000	39%	*22,250* + 0.39x(Inc > 100,000)
335,000	10,000,000	34%	113,900 + 0.34x(Inc > 335,000)
10,000,000	15,000,000	35%	3,400,000 + 0.35x(Inc > 10,000,000)
15,000,000	18,333,333	38%	5,150,000 + 0.38x(Inc > 15,000,000)
18,333,333		35%	6,416,667 + 0.35x(Inc > 18,333,333)

Personal Income Taxes

- **The US has a progressive tax structure with seven tax brackets of 10%, 15%, 25%, 28%, 33%, and 35%.**
- **Personal income taxes are determined by taxable income, filing status, and various credits.**
- **Result is that low income individuals pay no federal tax and others may fluctuate between the marginal rates.**

Income Tax Example

Lisa Miller of *Basket Wonders (BW)* is calculating the *income tax liability*, *marginal tax rate*, and *average tax rate* for the fiscal year ending December 31.

***BW's* corporate taxable income for this fiscal year was $250,000.**

Income Tax Example

Income tax liability

= *$22,250* + 0.39 × ($250,000 – $100,000) = *$22,250* + $58,500

= $80,750

***Marginal tax rate* = 39%**

***Average tax rate* = $80,750 / $250,000**

= 32.3%

Also solve in Excel! – *lecture 02.xlsx*

Depreciation

Depreciation **represents the systematic allocation of the cost of a capital asset over a period of time for financial reporting purposes, tax purposes, or both.**

- **Generally, profitable firms prefer to use an accelerated method for tax reporting purposes.**

Common Types of Depreciation

- **Straight-line (*SL*)**
- **Accelerated Types**
  - **Double Declining Balance (*DDB*)**
  - **Modified Accelerated Cost Recovery System (*MACRS*)**

MACRS Schedule

Recovery Year	Property Class		
	3-Year	5-Year	7-Year
1	33.33%	20.00%	14.29%
2	44.45	32.00	24.49
3	14.81	19.20	17.49
4	7.41	11.52	12.49
5		11.52	8.93
6		5.76	8.92
7			8.93
8			4.46

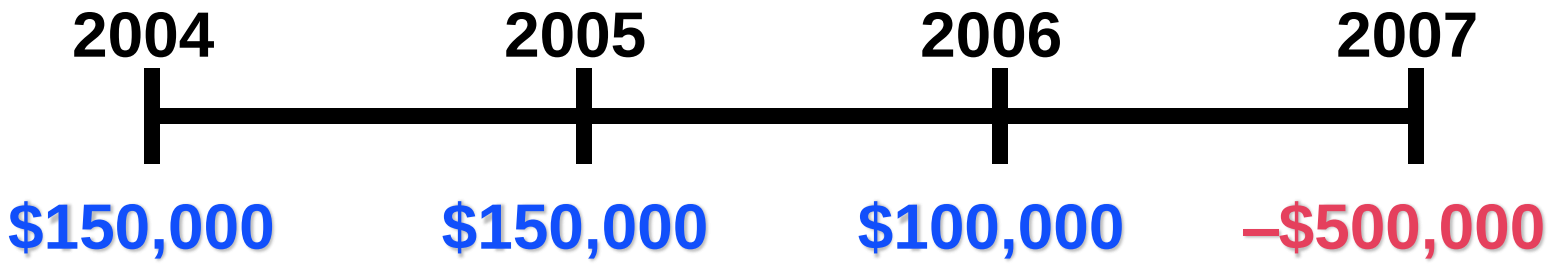
Handling Corporate Losses and Gains

- **Corporations that sustain a net operating loss can carry that loss back (*Carryback*) 2 years and forward (*Carryforward*) 20 years to offset operating gains in those years.**
- **Losses are generally carried back first and then forward starting with the earliest year with operating gains.**

Corporate Losses and Gains Example

Lisa Miller is examining the impact of an operating loss at *Basket Wonders (BW)* in 2003. The following time line shows operating income and losses.

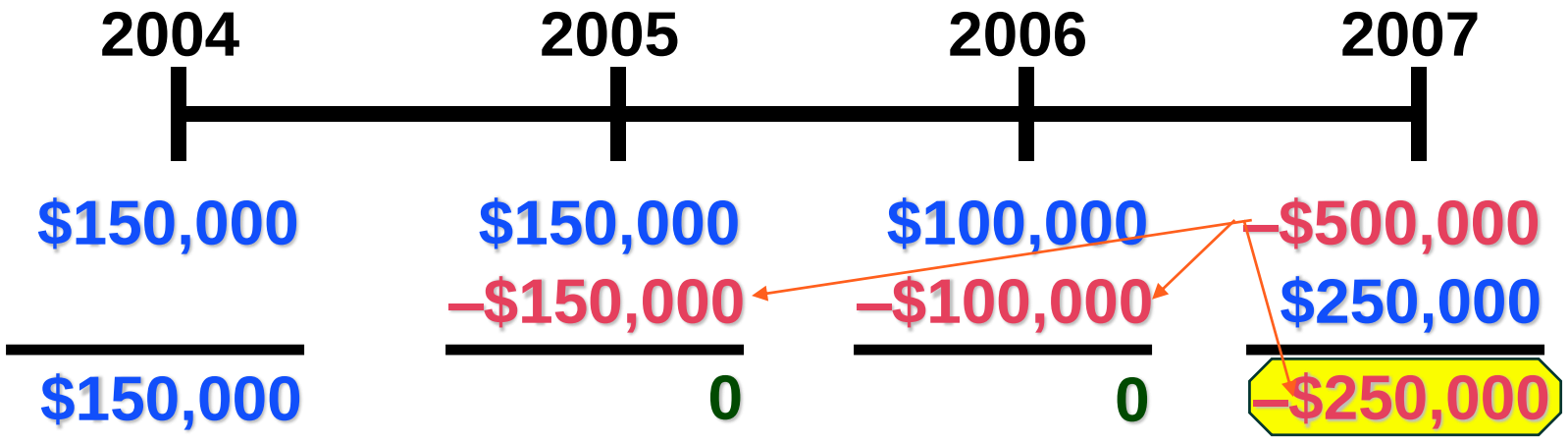
What impact does the 2007 loss have on *BW*?



Corporate Losses and Gains Example

The loss can offset the gain in each of the years 2005 and 2006. The remaining $250,000 can be carried forward to 2008 or beyond.

***Impact*: Tax refund for federal taxes paid in 2005 and 2006.**



Corporate Capital Gains / Losses

- **Generally, the sale of a "capital asset" (as defined by the IRS) generates a capital gain (asset sells for more than net book value) or capital loss (asset sells for less than net book value).**
- **Often historically, capital gains income has received more favorable (i.e. lower) US tax treatment than operating income.**

Corporate Capital Gains / Losses

- **Capital gains are usually taxed at lower rates than ordinary income from business operations.**

- **Capital losses are deductible only against capital gains. (Capital income tax does not apply to profits from business operations.)**

Quick Review of Lecture 2

- **4 Types of business entities?**
- **Average vs. marginal tax rate?**
- **What is depreciation?**

Interest Deductibility

Interest Expense **is the interest paid on outstanding debt and is *tax deductible*.**

Cash Dividend **is the cash distribution of earnings to shareholders and is *not* a tax deductible expense.**

The after-tax cost of debt (in dollars) is:
(Interest Expense) X (1 – Tax Rate)

Thus, debt financing has a tax advantage!

Interest Deductibility Example

- **Taxable income =**
  (Revenue – COGS – Salary - Depreciation – Interest Expense)

- **Income Tax =**
  (Revenue – COGS – Salary – Depreciation – Interest Expense) * Tax rate

- **After-tax income =**
  (1-Tax Rate)* (Revenue – COGS – Salary – Depreciation) - (1-Tax Rate) * Interest Expense

- **If company decides to pay out dividend,**
  - **Increase in retained earnings =**

  (1-Tax Rate)* (Revenue – COGS – Salary – Depreciation) -(1-Tax Rate) * Interest Expense – Dividend

- **Interest Expense reduces tax amount, which would not happen under equity financing**

Interest Deductibility Example

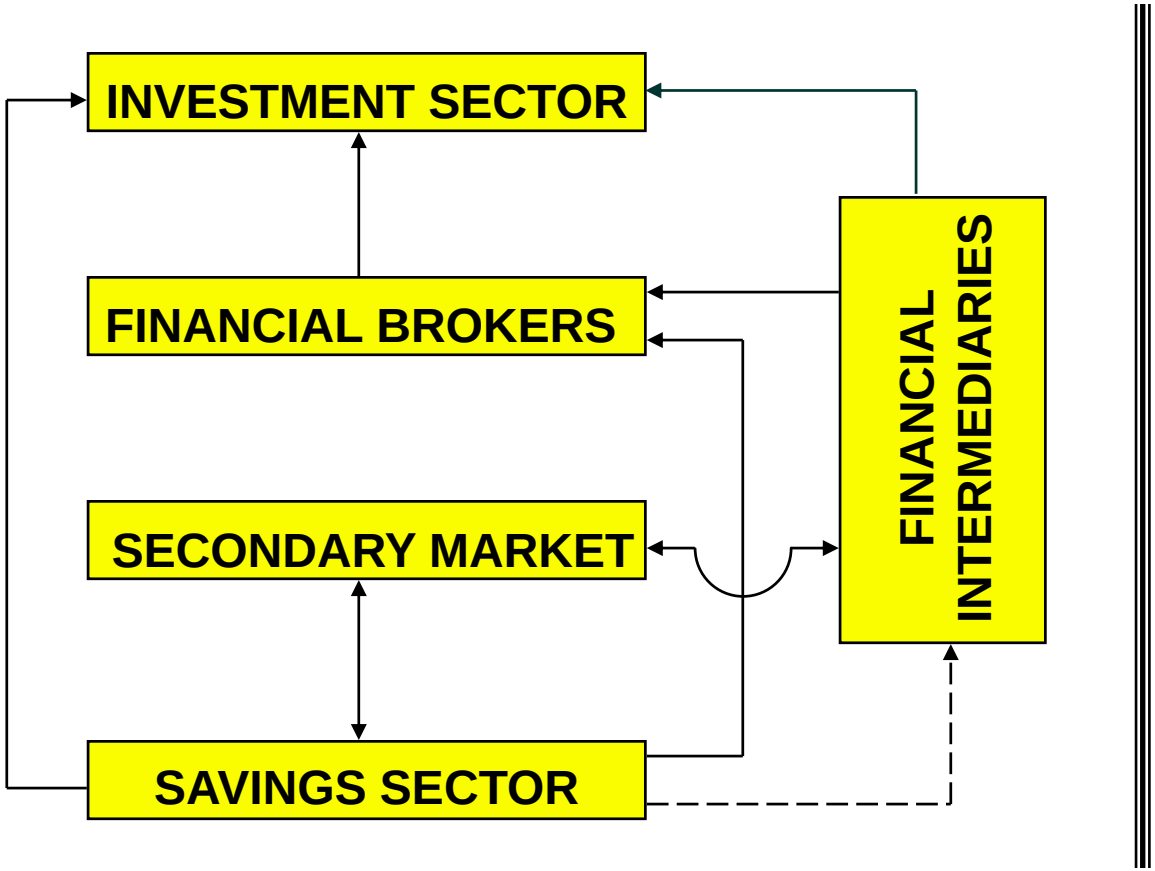
- Revenue = $100, COGS = $40, Salary = $10 Depreciation: $20, Interest Expense: $10,
- Corporate Tax Rate: 30%, Dividend Income Tax Rate: 15%
- Taxable income
  = (Revenue – COGS – Salary - Depreciation – Interest Exp)
  = 100 – 40 - 10 – 20 – 10
  = $20
- Income Tax
  = 20* 30%
  = $6
- After-tax income
  = 20 – 6
  = $14
- After-tax cost of debt
  = (1-30%) * 10
  =$7

- If company decides to pay out dividend of $10 out of $14
  - Increase in retained earnings = 14 – 10 = $4
- Shareholders will get 10 but have to pay dividend income tax of $1.5 on the dividend

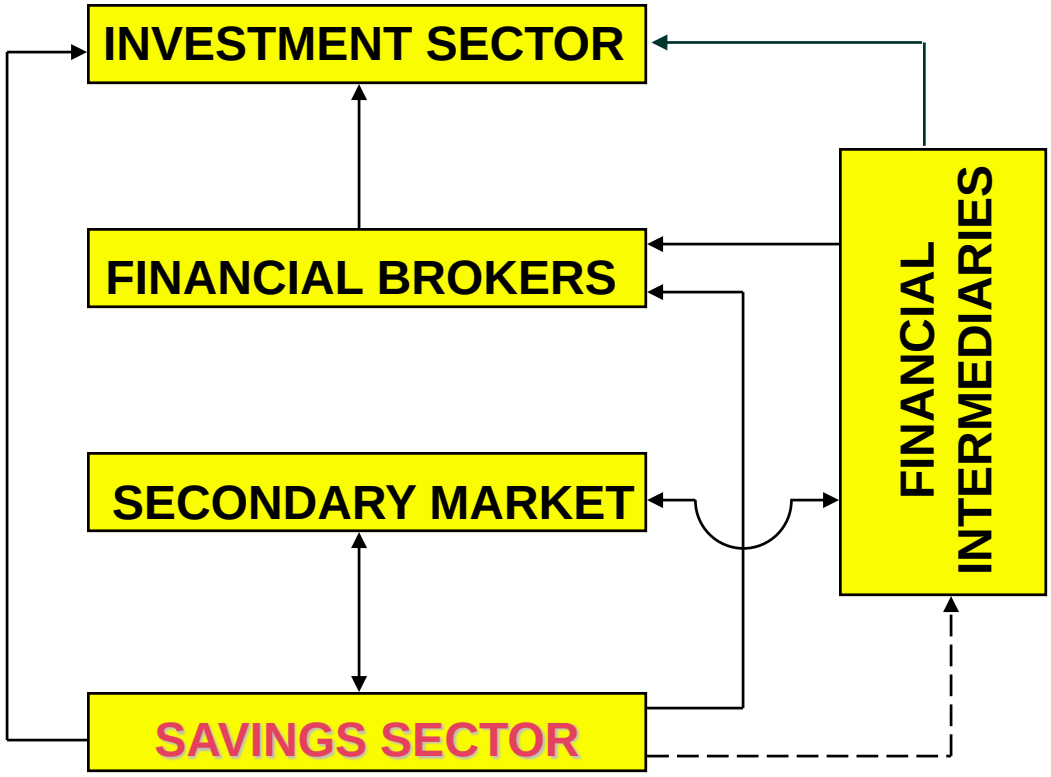
Financial Environment

- **Businesses interact continually with the financial markets.**
- ***Financial Markets*** **are composed of all institutions and procedures for bringing buyers and sellers of financial instruments together.**
- **The purpose of financial markets is to efficiently allocate savings to ultimate users.**

Flow of Funds in the Economy



Flow of Funds in the Economy



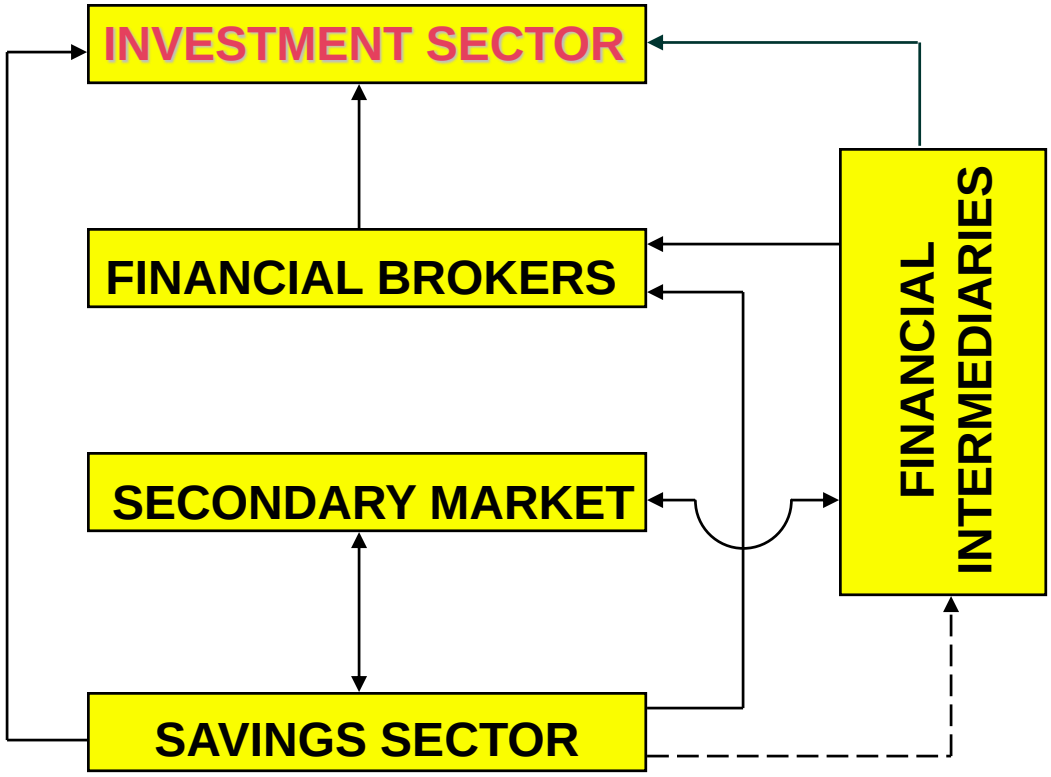
SAVINGS SECTOR

Households

Businesses

Government

Flow of Funds in the Economy



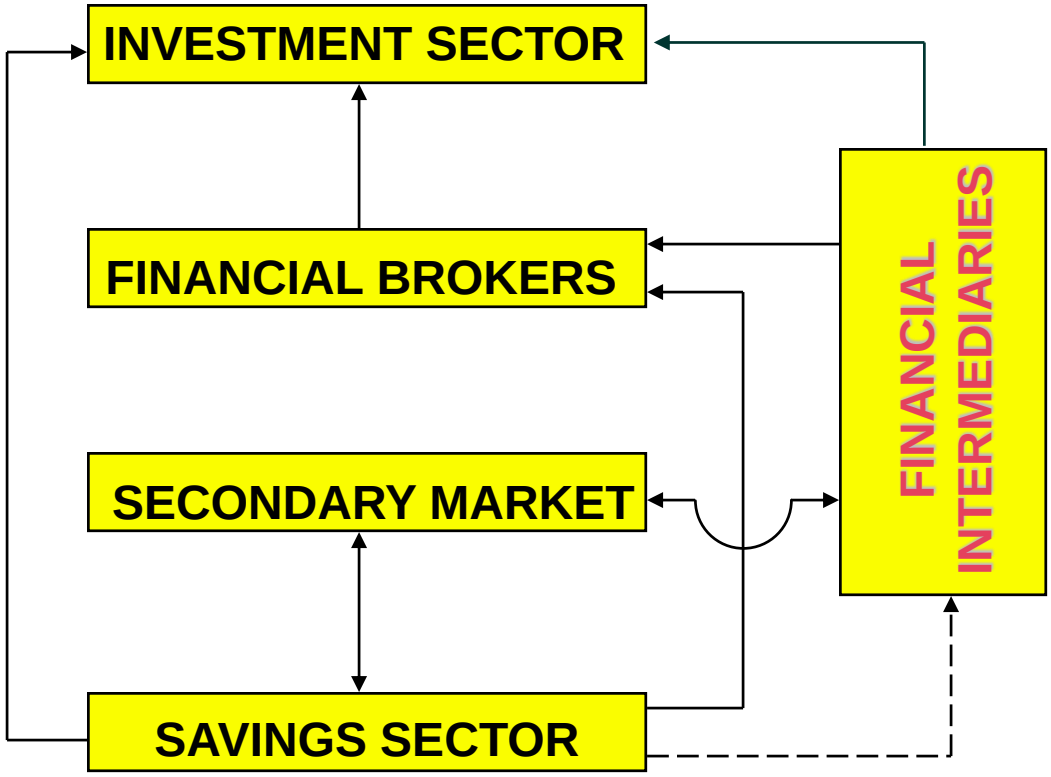
INVESTMENT SECTOR

Businesses

Government

Households

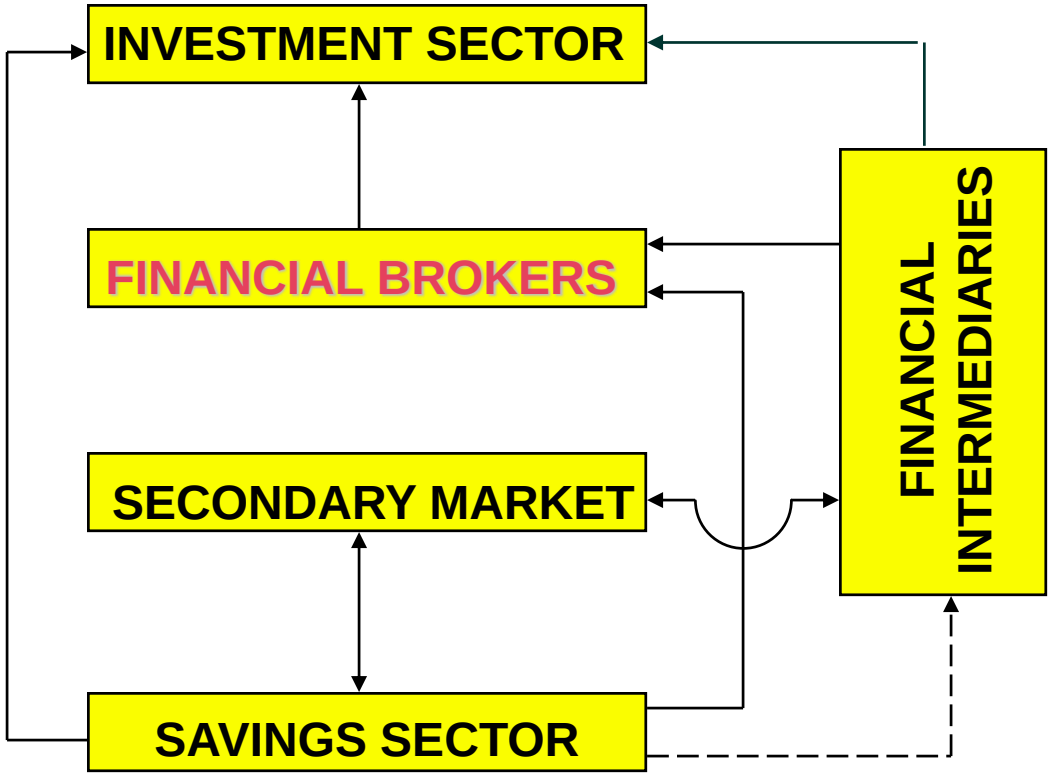
Flow of Funds in the Economy



FINANCIAL INTERMEDIARIES

Commercial Banks
Savings Institutions
Insurance Company
Pension Funds
Mutual Funds
Venture Capital
Private Equity

Flow of Funds in the Economy

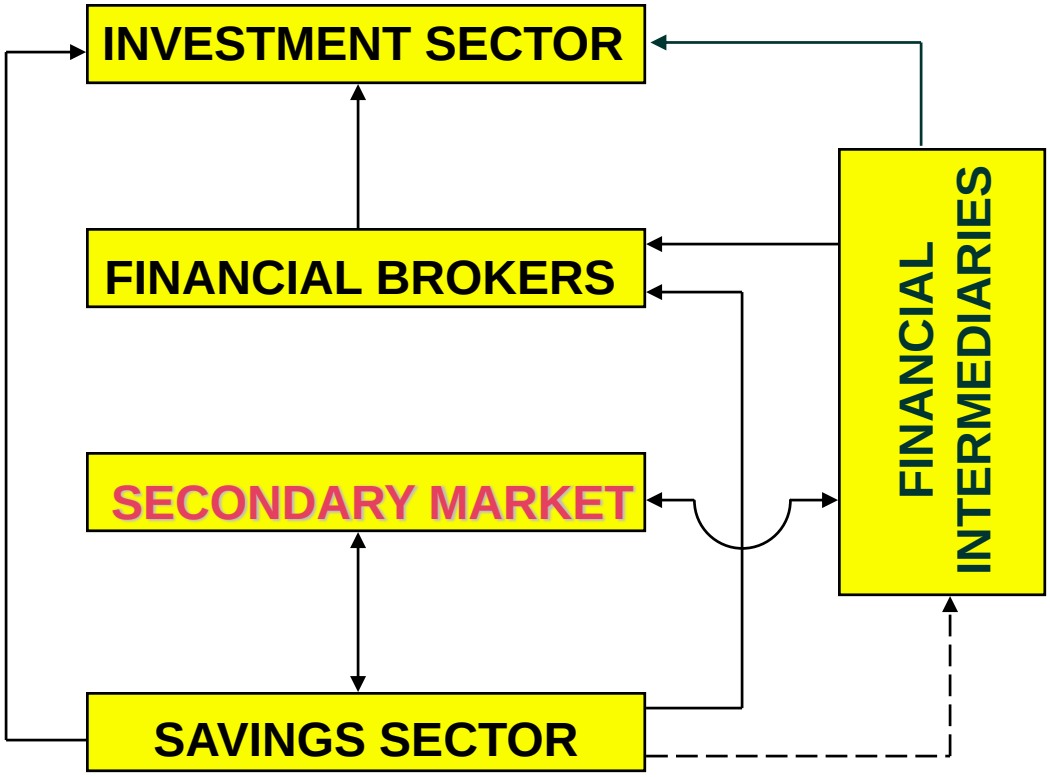


FINANCIAL BROKERS

Investment Bankers

Mortgage Bankers

Flow of Funds in the Economy



SECONDARY MARKET

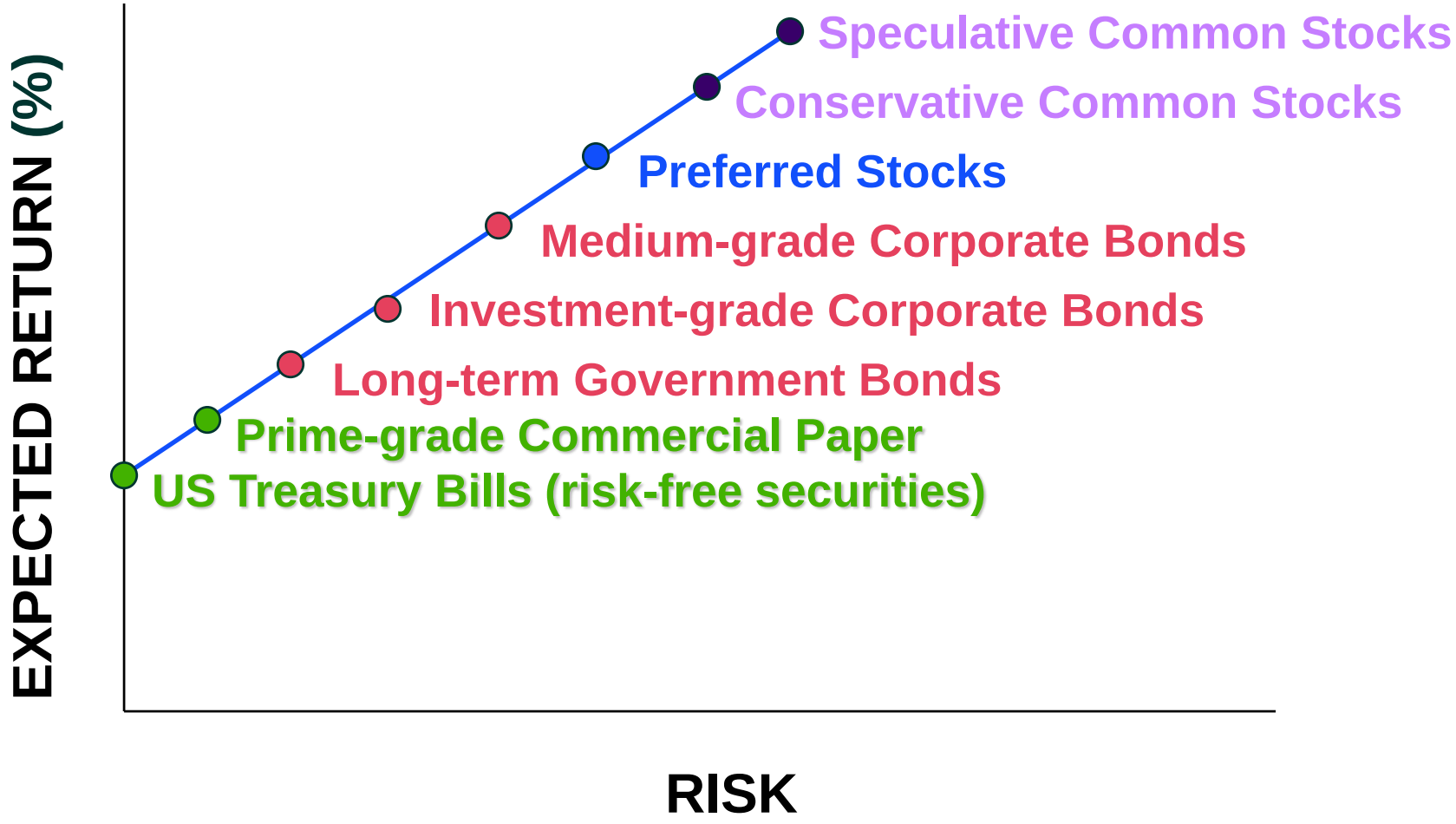
Security Exchanges

OTC Market

Allocation of Funds

- **Funds will flow to economic units that are willing to provide the greatest expected return (holding risk constant).**
- **In a rational world, the highest expected returns will be offered only by those economic units with the most promising investment opportunities.**
- ***Result*: Savings tend to be allocated to the most efficient uses.**

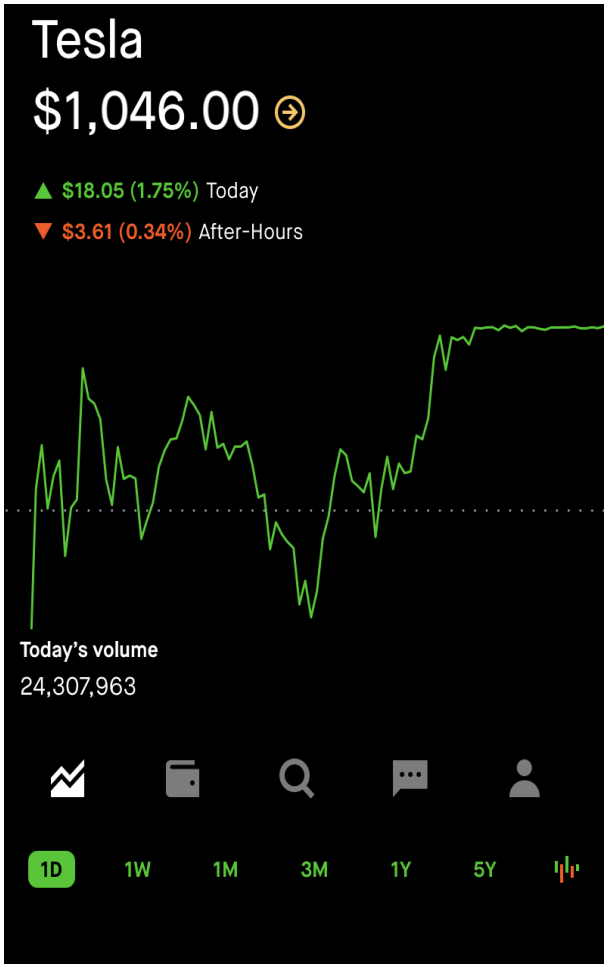
Risk-Expected Return Profile

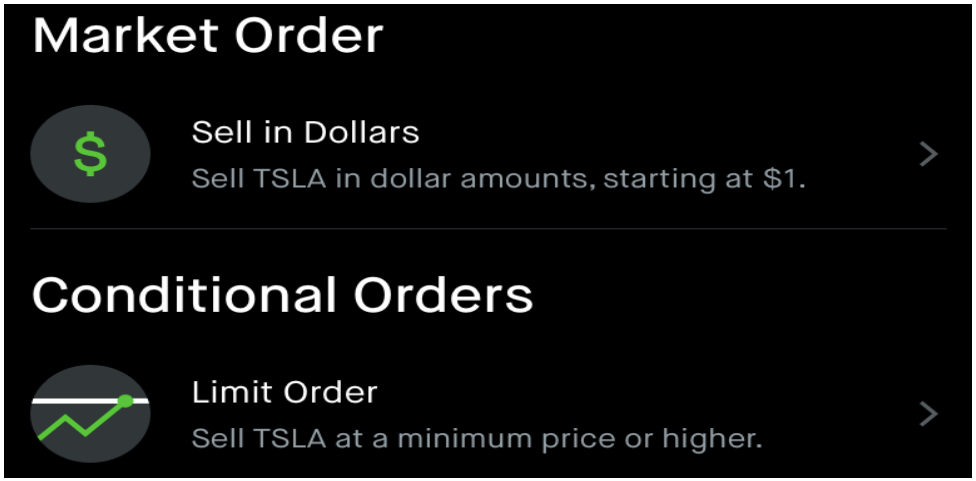


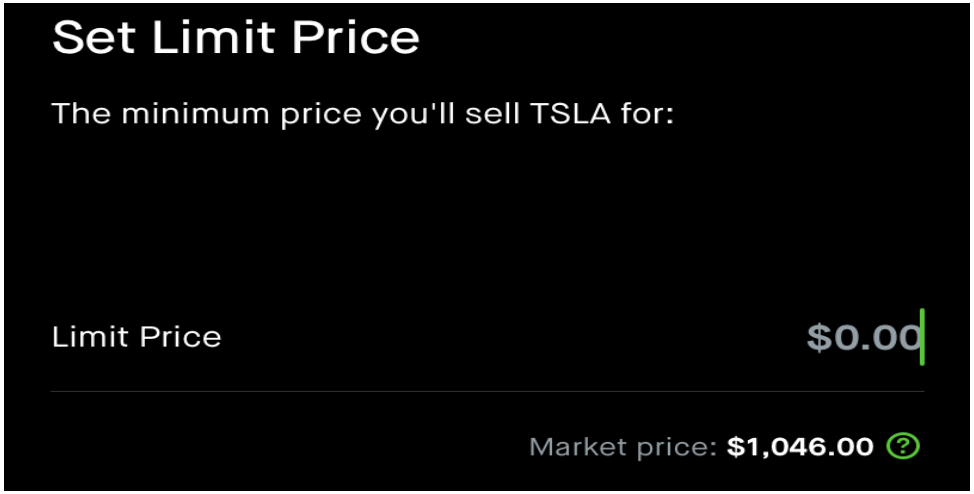
What Influences Security Expected Returns?

- ***Default (Credit) Risk*** **is the failure to meet the terms of a contract.**
- ***Marketability (Liquidity)*** **is the ability to sell a significant volume of securities in a short period of time in the secondary market without significant price concession.**

Example of Liquidity (Marketability)







Ratings by Investment Agencies on Default Risk

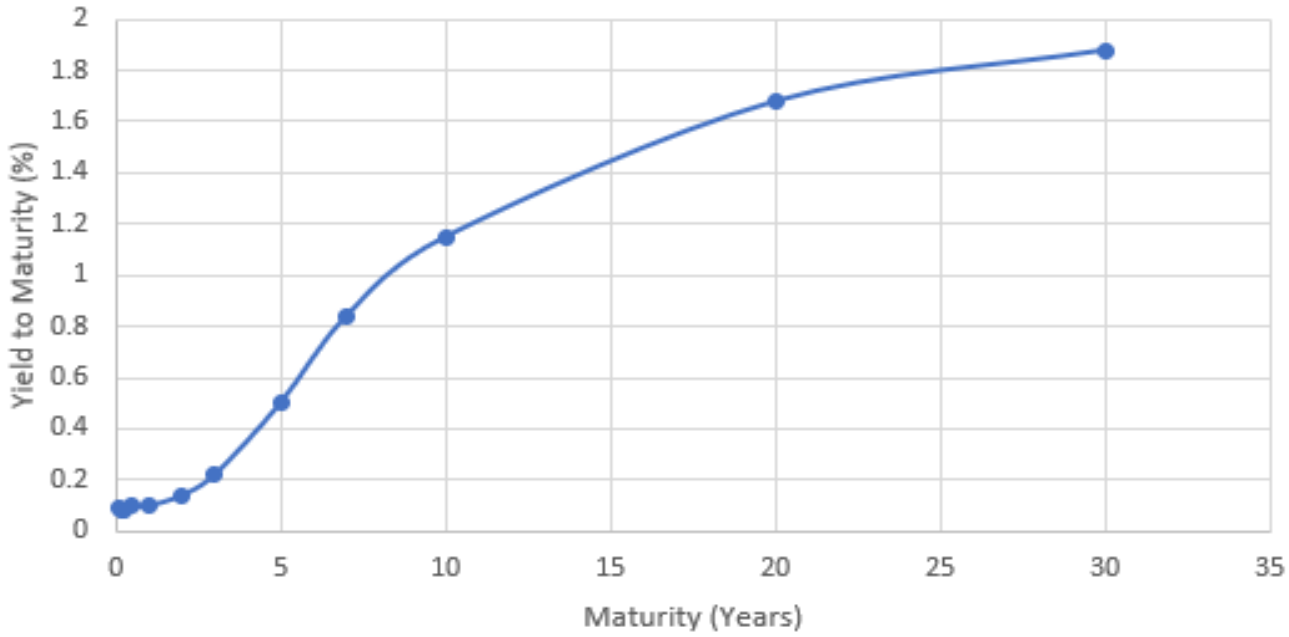
MOODY'S INV SERVICE		STANDARD & POOR'S	
Aaa	Best Quality	AAA	Highest Grade
Aa	High Quality	AA	High Grade
A	Upper Med Grade	A	Higher Med Grade
Baa	Medium Grade	BBB	Medium Grade
Ba	Possess Speculative Elements	BB	Speculative
⋮	⋮	⋮	⋮
C	Lowest Grade	D	In Payment Default

Investment grade **represents the top four categories.**
Below investment grade **represents all other categories.**

What Influences Expected Security Returns?

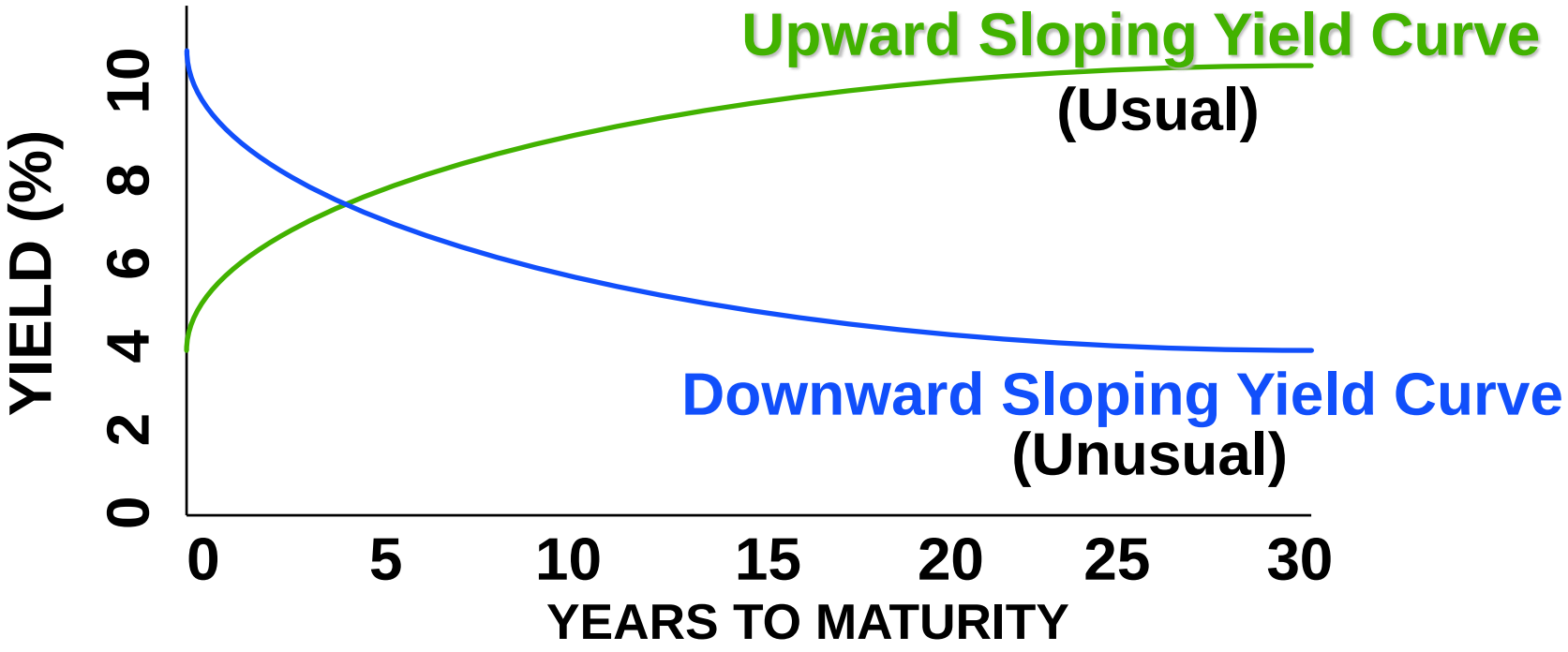
- ***Maturity*** **is concerned with the life of the security; the amount of time before the principal amount of a security becomes due.**
- ***Taxability*** **considers the expected tax consequences of the security.**

US Treasury Yield Curve (1 / 11 / 2021)



This yield curve is the relationship of US Treasuries effective January 11, 2021

Term Structure of Interest Rates



A yield curve is a graph of the relationship between yields and term to maturity for particular securities.

What Influences Expected Security Returns?

- ***Embedded Options*** **provide the opportunity to change specific attributes of the security.**
- ***Inflation*** **is a rise in the average level of prices of goods and services. The greater inflation expectations, then the greater the expected return.**