

C214 Concept Quiz Answers

Answers to quiz questions are provided <u>in context</u> in each Overview slide to explain the rationale for the correct answers. It is important to <u>understand</u> the answers, not just memorize them.

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Q1 What is goal of corporation?

Goal of a Corporation

Enhance Long-Run Stock Value

Essentials for Success

- **Equity:** Competitive return to shareholders
- > Productive Employees and Capital Equipment
- Customer Demand: Products, Prices, Service

Corporations are simply "passthrough" legal entities: benefits and costs are shared by shareholders, employees, and customers Q2. Risk premium?

2. Return Must Compensate for Risk: Risk Aversion

Required Return Line:

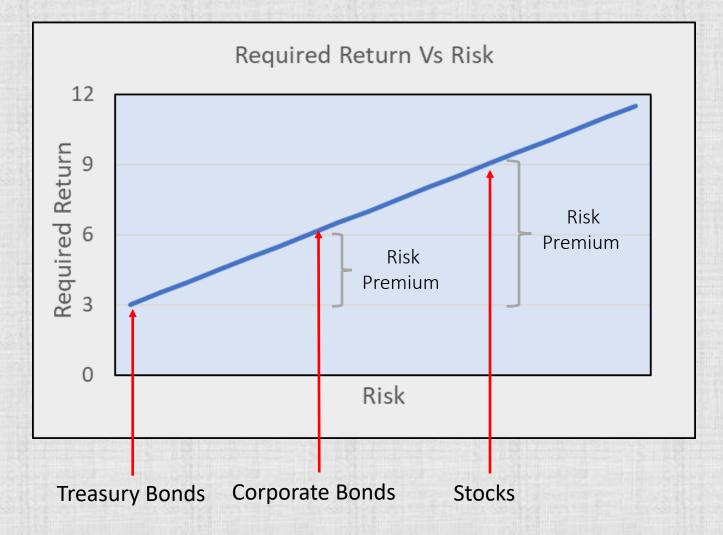
Determined

by

Supply & Demand

Risk Premiums: Investor perception of risk

Degree of riskaversion varies among investors



Risk?
Firm may go bankrupt!
Stock price might fall!

Required Return:

The minimum "yield" or "profit" necessary to induce investors to buy the security

Investors require higher returns to compensate for higher risk: a "risk premium"

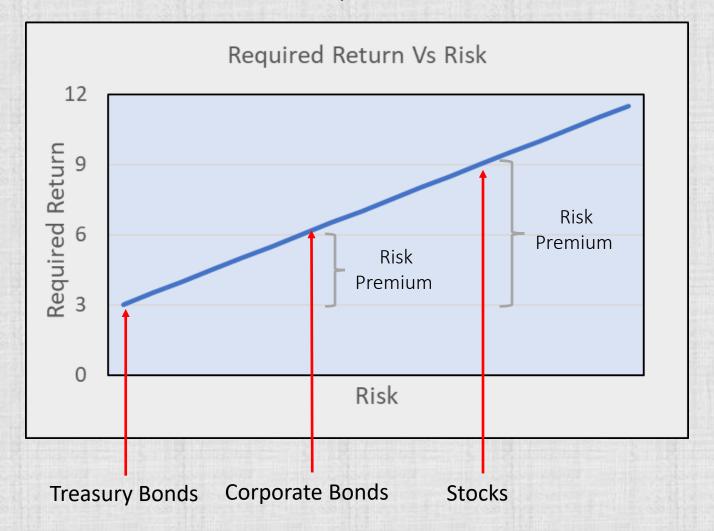
Q3 Risk v Required Return

2. Return Must Compensate for Risk: Risk Aversion

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Q4. Value of money determinants?

3. Time Value of Money





Which Pot of Gold do you prefer?

The Value of Money depends upon size, timing & certainty of cash flows.

Q5. Purpose of 10K?

Flow: During last year

Financial Statements – 10K Reports

BALANCE SHEET					
ASSETS		LIABILITIES & NW			
Cash	210	Accounts Payable	290		
Acc. Rec.	180	Accrued Expenses	30		
Inventory	150	Other	20		
Current Assets 540		Current Liabilities	340		
Gross PPE	1200	Long Term Debt	670		
Acc. Depreciation	200	Total Liabilities	1010		
Net PPE	1000	Stock	400		
LT Securities	0	Retained Earnings	130		
Total Assets 1540 Total L & E 1540					

P&L STATEMENT	
Sales	386
Cost of Sales	235
Gross Profit (margin)	151
Operating Expense	15
Depreciation	6
EBIT (Oper. Income)	130
Interest Expense	50
EBT	80
Taxes	15
Net Income	65

CASH FLOW
Cash from Operations: CFO
Net Income
Depreciation
Net Working Capital
Cash from Investing: CFI
Gross PPE
Cash from Financing CFF
Debt
Stock
Dividends

The SEC requires <u>all public</u> corporations to file audited financial reports - - 10K

Stringent required financial transparency supports efficient financial markets

10-K reports are available at: https://www.sec.gov/edgar.shtml

Cash Flows from Operations (CFO)

Cash "earned" by producing and selling the firm's product

CFO = Net Income + Depreciation Expense - Increase in Net Working Capital

Net Working Capital = Current Assets – Current Liabilities

Current Assets: Accounts Receivable + Inventory (Excludes cash)

Current Liabilities = Accounts Payable + Accrued Expenses

Increase in Asset = Reduces CFO Increase in Liability = Increases CFO

Decrease in Asset = Increases CFO Decrease in Liability = Decreases CFO

Increase in Net Working Capital = Reduces CFO

Q7. Causes cash outflow?

Balance Sheet, Dec 31, 2020

ASSETS

LIABILITIES & EQUITY

Daily Operations

aka Operating Assets

Buying Equipment

Accumulated
From
Income
Statement
Each Year
in the past

				0.00 18 9/20 11
	Cash & ST Securities	210	Accounts Payable	270
	Accounts Receivable	180	Accrued Expenses	70
	Inventory	150	Notes Payable	0
	Current Assets	540	Current Liabilities	340
	Long Term Assets		Long Term Debt	670
	Gross PPE	1200	Total Liabilities	1010
7	Accumulated Depreciation	200	Stock	400
	Net PPE	1000	Retained Earnings	130
	LT Securities	0	Total Equity	530
	Total Assets	1540	Total Liabilities & Equity	1540

Daily Operations

aka Operating Liabilities

Raising Cash:
Issue bonds & stock

Accumulated
From
Income
Statement
Each Year
in the past

Uses of Funds

Increase in Asset = Cash Outflow

Buy machine = Pay Cash

Asset Cash

Sources of Funds

Increase in Liability/Equity = Cash Inflow

Sell Bonds to Investors = Receive Cash

Debt & Equity Cash

Q8. Gross PPE equals?

Balance Sheet, Dec 31, 2020

ASSETS

LIABILITIES & EQUITY

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Debt & Equity Cash

Q9. Net margin equals?

Income Statement, for the year 2020

Sales Revenue	500	
minus Cost of Goods Sold	200	
= Gross Profit	300	Gross Margin = Gross Profit/Sales
minus Operating Expense	50	Added to Acc. Dep.
minus Depreciation (non-cash)	100	on Balance Sheet
= EBIT	150	Operating Margin = EBIT/Sales
minus Interest	<u>50</u>	
= EBT	100	Pre-Tax Profit 75/500=15%
minus Taxes (@25%)	<u>25</u>	
= Net Income	75	Net Margin = Net Income / Sales

Net Income = Dividends Paid + Added to Retained Earnings

Payout Ratio = Dividends Paid / Net Income

Added to RE on Balance Sheet

Income statements for SEC follow <u>GAAP</u>, but income for tax purposes follow <u>IRS</u> rules

IRS: Recognition of revenues & expenses may occur in <u>different</u> time periods

IRS: Actual taxes paid will be less than GAAP taxes

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Q11. Added to get net cash flow?

Why Subtract Increase in NWC?

Results from non-cash accrual revenues & expenses

Cash Flow

Accrual Accounting

Non-Cash Expense

CFO = Net Income + Depreciation Expense - Increase in Net Working Capital

Cash Flow Operations	(CFO)
Cash Sales	500
Credit Sales	200
Sales Revenue	700
minus Oper. Expenses	200
minus Depreciation	<u>100</u>
equals Net Income	400
plus Depreciation	<u>100</u>
Cash Flow	500
minus Increase in NWC	200
CFO	300

NWC: adjusts for non-cash items in Net Income

Revenue Recognition: When product shipped, not when cash received.

Accounts Receivable: +200

No Cash received from Credit Sales

Accounts Receivable: Cash owed to the firm

Must subtract increased A/R to avoid overcounting

Non-Cash

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Q13. Measures reliance on debt?

Financial Ratios

Liquidity: Bill-paying capacity

Current Ratio: Current Assets/Current Liabilities

Quick Ratio: (Current Assets – Inventory)/Current Liabilities

Efficiency: Revenue per Asset

Total Asset Turnover: Sales/Total Assets

Fixed Asset Turnover: Sales/Fixed Assets

Financing: Reliance on Debt

Debt Ratio: Liabilities/Assets

Financial Leverage: Assets/Equity

Profitability: Net Income

Return on Equity: Net Income/Equity

Return on Assets: Net Income/Assets

<u>Calculating</u> Ratios: Inserting values in formula & solving

Interpretating Ratios: What does a higher/lower value mean?

Financial Ratio Analysis

Main Types of Analyses

Trend Analysis: Compares ratios of a firm over time

Cross-Sectional: Compares firm to competitor or industry average

Main Pitfalls

Timing Issues: Fiscal years of firms may differ

Seasonal: Some firms have seasonal sales

Accounting: Inventory valuation methods may differ

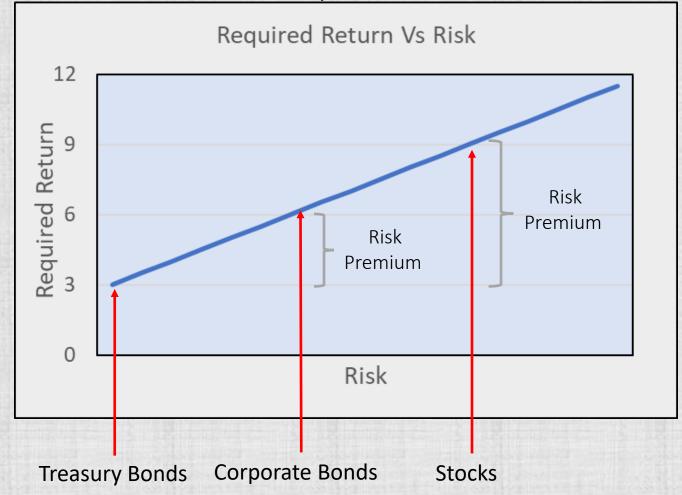
Ratio analysis is a rough tool that is just the first step of deeper analysis

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Risk?Firm may go bankrupt!
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Stock Trading: Auction Markets

The New York Stock Exchange (NYSE) is just one of **13** "auction markets" for trading stocks.

Virtually all stock trading is computer-executed



NYSE trade floor on Wall Street



NYSE ARCA in Mahwah, New Jersey

Stock markets are very efficient - - very large volume of secondary market trades each day.

Elements of Time Value of Money

Meaning of the white function keys

Present Value (PV) = a single lump of cash today

Future Value (FV) = a single lump of cash in the future

Payment (PMT) = a <u>series</u> of lumps of cash (i.e., per <u>period</u>)

Periods (N) = number of payment <u>periods</u>

Interest Rate (I/Y) = is the interest rate per payment period

TVM Problems: Question will provide 3 inputs, must solve for the 4th variable

Not necessarily years

Must adjust if not annual

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Present Value (PV) vs Future Value (FV)

PV: Cash Today FV: Cash in Future

If you deposit \$100 in a savings account earning 5% *interest*, how much money would you have in 1 year?

Basic TVM equation

FV = PV X (1 + interest rate)

 $100 \longrightarrow 105 = 5\%$ increase in value

Interest = Yield = Required Return = Expected Return = Profit per period

Q20. Signifies Begin Mode?

Time Value of Money: Problem #3

Annuity Due: Payments received at beginning of period

If \$1,000 is received at the <u>beginning</u> of <u>each year</u> for 10 years that earns 5% interest, what is the dollar value of the investment in 10 years?

Change Calculator to the Begin Mode:	2nd , BGN, 2 nd , Set, Off, On	Result: 0.0000

$$N = number of periods = 10$$
 10 N

Change Calculator back to End Mode

2nd, BGN, 2nd, Set, Off, On Result: 0.0000

Bgn

Time Value of Money: Problem #3

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Change Calculator back to End Mode

2nd, BGN, 2nd, Set, Off, On Result: 0.0000

Bgn

1. Efficient Financial Markets

Effective decision-making depends on market efficiency

Efficiency Requirements:

Competitive: Many buyers and sellers

Liquid: Sell/buy quickly; small bid/ask spread

Transparent: Informed investors

Standardized: Standard security

Efficient Markets impact:

Well-managed firms have lower cost of financing

Investor transactions cost are minimized

Growth Perpetual Annuity: Problem #5

Endless stream of **Increasing** payments:

Key words:

Forever

&

Grows

PV = First Payment / (Interest Rate – Growth rate)

Assume a \$100 payment that grows by 3% per year with a 10% interest rate.

$$PV = 100 / (.10 - .03)$$

This analytic will be used in determining the value of common stock (i.e., common stock has no maturity and growing dividend over time)

4. Decision-Making Under Uncertainty

Finance versus Accounting

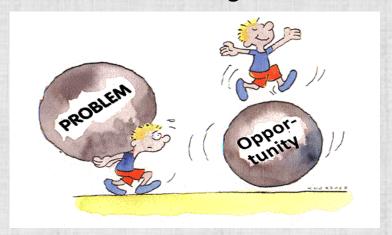
Accounting: Measure previous activity

Finance: Future transactions

Finance <u>requires</u> decision-making under <u>uncertainty</u>
Requires projections of future
Inputs may be estimates

"Correct" decision depends on degree of risk aversion

How does the manager view risk?



CFO Calculation Problem

CFO = Net Income + Depreciation Expense - Increase in Net Working Capital

Net Working Capital = Current Assets *minus* Current Liabilities

What is CFO given the following information:

		Net Income	350,000		
		Depreciation	100,000	Balance Sheet	<u>CFO</u>
	[Assats	Increase in A/R	100,000	Increase in asset:	Decrease
Net Norking - Capital	Assets -	Decrease in Inventory	60,000	Decrease in asset:	Increase
	Liabilities	Increase in A/P	80,000	Increase in liability:	Increase
	Liubilities	Decrease in Accrued	35,000	Decrease in liability:	Decrease

CFO = 350,000 + 100,000 - 100,000 + 60,000 + 80,000 - 35,000 = 455,000

Add CFO Increases

Financing the Firm: Bonds & Stock

Bonds: A "loan" from Investor Stock: Investor becomes part Owner

Principal: \$1,000 usually Principal: Price of stock

Interest: Legal obligation of Firm Dividends: At discretion of Firm

Maturity: Principal repaid to investor Maturity: None

Secondary Market Trading

Legal Provisions of a Bond: Indenture

Face Value: Dollar amount of the corporate debt to Investor (usually \$1,000)

Coupon Rate: Interest rate used to calculate <u>annual</u> interest payments to investor

(Coupon Rate x Face Value = Annual Interest Payment)

Interest Payment Dates: Schedule of days for interest payments (usually semi-annually)

Maturity: Date at which bond matures and Face Value is repaid to Investor

All are <u>fixed legal obligations</u> of the corporation that must be met to avoid bankruptcy.

A bond's price & yield are set by supply & demand in secondary market trading.

Prices & Yields change continuously - - Coupon Rate is fixed

Q28 Yield is?

What is "Yield to Maturity"?

Bond: 1-year, 5% Coupon, \$1,000 Face Value

Price Paid

Cash Received

Yield

Par

\$1000

50+1000=\$1050

(1050-1000)/1000 = 5.00%

Buy Bond for:

\$1,000

Yield = investor

profit per period

OR

Indenture

Cash at Maturity:

\$1,050

\$ Profit:

\$50

50/1000 = 5% % Profit:

Yield = rate of increase in value per period

> At Par price: Yield = Coupon Rate

Q29 When is yield = coupon?

What is "Yield to Maturity"?

Bond: 1-year, 5% Coupon, \$1,000 Face Value

Price Paid

Cash Received

Yield

Par

\$1000

50+1000=\$1050

(1050-1000)/1000 = 5.00%

Buy Bond for:

\$1,000

Yield = investor

Indenture

Cash at Maturity:

\$1,050

OR

profit per period

\$ Profit:

\$50

Yield = rate of

increase in value

per period

% Profit:

50/1000 = 5%

> At Par price: Yield = Coupon Rate

Expressed as annual rate

Bond Valuation: Problem #1

Expressed as annual rate

Value of \$1,000 5-year, 4% coupon, semi-annual pay bond, at 6% yield?

N = number of payments =
$$5 \times 2 = 10$$

I/Y = periodic yield = $6 / 2 = 3$

PMT = payments = $(4\% \times \$1,000) / 2 = 20$

FV = face value = $\$1,000$

PV = ?

Calculator Keys

10 N

Not annual?

Aust adjust PMT, N, & I/Y

20 PMT

CPT PV = (914.70)

Note: PV is negative because it is the price paid for the bond

Bond problems: Question provides 4 inputs, must solve for the 5th variable

Coupon Rate vs Bond Yield

Premium Price: <u>Bond Yield < Coupon Rate</u>

Bond price increase lowers bond yield

Par Price: Bond Yield = Coupon Rate

Discount Price: <u>Bond Yield > Coupon Rate</u>

Bond price drop increases bond yield

- > At Par Price: Yield = Coupon Rate
- > Inverse relationship between Price & Yield

Remember:
Coupon rate never changes



Factors affecting a Bond's Required Yield

Treasury Yields: Required Return includes a "risk premium" over Treasury

Credit Risk: AAA-rated bonds are less risky than BBB-rated bonds

Economy: Probability of bankruptcy is greater in recession.

Market Risk: Long-term bonds have more price volatility

Collateral: Secured bonds have lower yields due to less risk

Subordinated debentures: last claim in bankruptcy

Taxes: Tax-exempt Municipal bonds have lower yields

Bond Valuation: Duration

What if bond yield increases from 4% to 5%? How much will price drop?

5-Year Bond: Price drops from 1000 to 956.

Price drops by 4.4%: Duration = 4.4

10-Year Bond: Price drops from 1000 to 922.

Price drops by 7.8%: Duration = 7.8

Long-Term bond: Greater duration than Short-Term bond

Duration: The percentage drop in price caused by 1% increase in yield.

Duration measures the <u>Market Risk</u> of a bond i.e., how volatile are prices as market interest rates change over time

Coupon Rate vs Bond Yield

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Legal Provisions of Stock

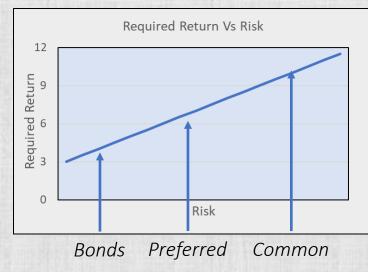
Common Stock:

Ownership of EPS (earnings per share)
Receive dividends at discretion of the corporation
Voting rights to elect Board of Directors
No Maturity Date

Preferred Stock:

Priority of claims in bankruptcy Fixed \$ Dividend No voting rights No Maturity Date

Preferred stock is a <u>hybrid</u> of bonds and common stock



Risk & Required Return: half-way between bonds and common stock

Bankruptcy Risk = Credit Rating

Bond ratings measure only risk of default, not market risk

Corporate Bond Credit Ratings

AAA: Close to 0% probability of default *i.e., Microsoft*

BBB: Roughly 5% probability of default *i.e., Ford*

Corporate Borra ereart Matrings							
S&P	Moodys	Grade	Credit Quality				
AAA	Aaa		Highest				
AA	Aa		High				
Α	Α	Investment	Strong				
BBB	Baa		Medium				
BB,B	Ba, B		Speculative				
CCC,CC,C	Caa, Ca, C	Junk	Highly Speculative				
D	С		In Default				

What if the firm's financial condition changes?

Credit Down-Grade? Price drops as Required Return increases

Credit Up-Grade? Price rises as Required Return decreases

#1 Actual Return to Stock Investor

Key Words: Not Growth or Beta

Sources of Return:

Dividends paid to the Investor

Capital Gain/Loss: Sales price minus purchase price

Example:

An investor expecting a 15% return buys a stock for \$40, receives a \$2 dividend, and sells the stock for \$50 after a year. What is the actual return?

OR

Return % = (Dividend + Capital Gain) / Purchase Price

Dividend = 2

Capital Gain = (50 - 40) = 10

Purchase Price = 40

Return % = (2 + 10) / 40 = 30%

Calculator Keys

2 PMT

1 N

40 +/- PV

50 FV

CPT I/Y = 30%

#4 Capital Asset Pricing Model (CAPM)

Required Return for a **Specific** Stock



#4 Capital Asset Pricing Model (CAPM)

Required Return for a **Specific** Stock



Q40 What doesn't eliminate idiosyncratic risk?

Diversification: Eliminates Idiosyncratic Risk

Idiosyncratic Risk: events that impact only a <u>single</u> firm

Systematic Risk: events that impact all firms



Number of stocks in portfolio

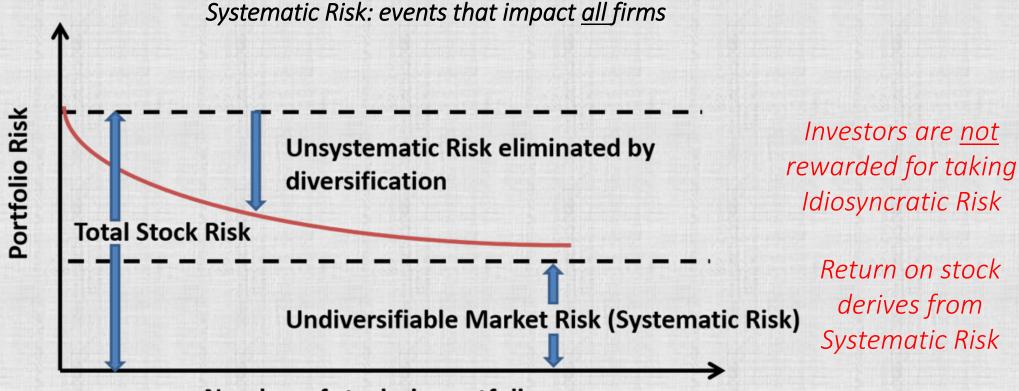
As the number of stocks increase, idiosyncratic risk decreases.

Firm's <u>Beta:</u> Impact of <u>systematic</u> risk

Idiosyncratic Risk: Fire destroys factory Systematic Risk: Economy in Recession

Diversification: Eliminates Idiosyncratic Risk

Idiosyncratic Risk: events that impact only a <u>single</u> firm Systematic Risk: events that impact <u>all</u> firms



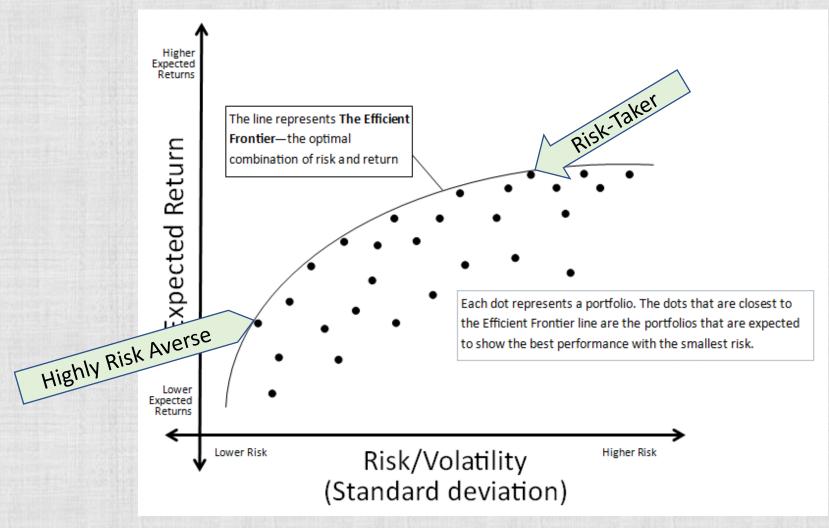
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Efficient Frontier



Efficient Frontier:

Diversified portfolios with no Idiosyncratic risk.

Points below the Frontier: Insufficient Diversification

Prudent Investors select a portfolio on the Efficient Frontier that is consistent with their risk preferences, (degree of risk aversion)

The mix of Risk and Return depends upon investor risk aversion.

Risk Averse: Portfolio of **Bonds & Low Beta** stocks

Risk Taker: Portfolio of **High Beta** stocks

Diversification: Eliminates Idiosyncratic Risk

Idiosyncratic Risk: events that impact only a single firm

Systematic Risk: events that impact all firms



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Factors Affecting WACC

A firm's WACC affected by:

Treasury Yields: Required Return: Risk Premiums over Treasury

Debt-Equity Mix: Debt is cheaper than Equity

Tax Rate: Tax *increase decreases* after-tax debt cost

Riskiness of Firm: Risk Premiums on debt & equity

Credit Risk: Chance of Bankruptcy

Bonds: Rating by S&P, Moody's

Stock: Low Equity & EPS

Market Risk: Price Volatility

Bonds: Measured by "Duration"

Stock: Measured by "Beta"

Gordon Growth Model

Stock Price = Expected Dividend / (Required Return – Growth Rate)

Stock Price = PV of expected Dividends

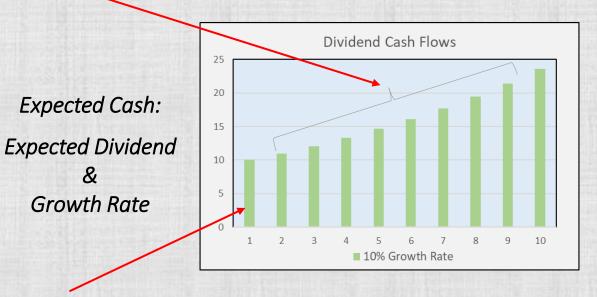
Assumes dividends increase at a steady growth rate forever

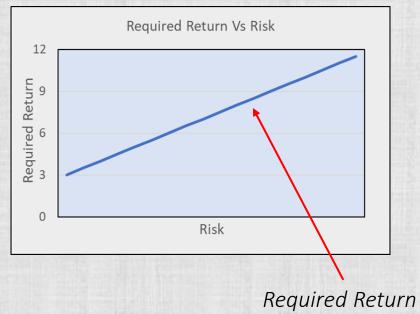
Uncertainty: Growth Rate of Dividends???

Rate of increase: Growth Rate

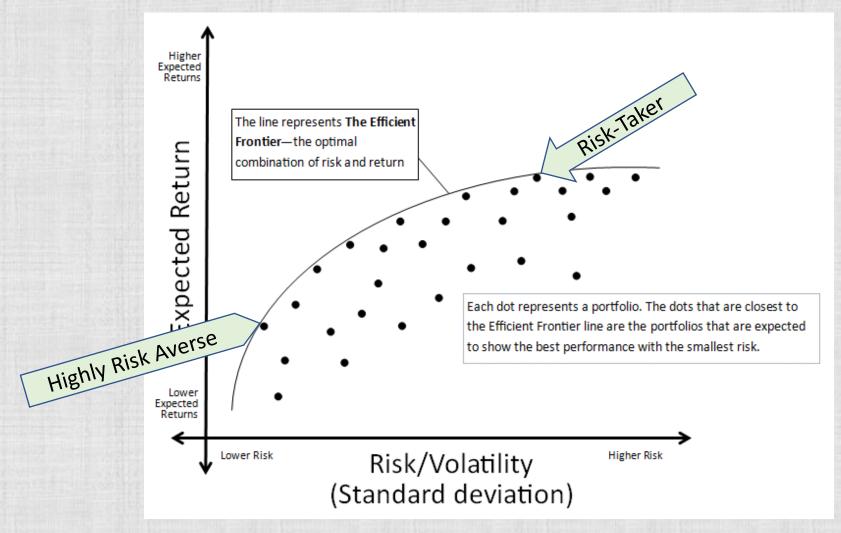
&

Expected Dividend





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Risk Taker: Portfolio of **High Beta** stocks

Which Stock Should You Buy?

Supra Technology

Great product

Dominant market share

Steady profitability

Intrinsic value = 25

Market price = 35

Knock-Off Imports

Low priced clothing Small market share Profitability: Low Intrinsic value = 12 Market price = 6

There is no such thing as a "good" stock or a "bad" stock!

There are "good" prices and "bad" prices!

If market price < intrinsic value: Buy

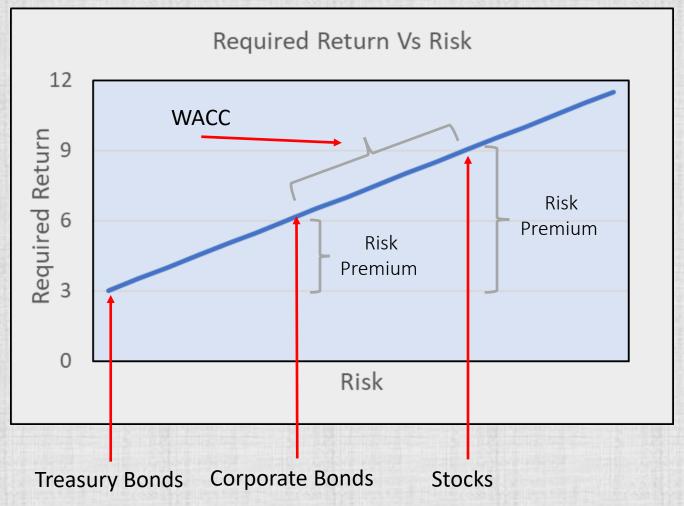
Price expected to rise

If market price > intrinsic value: Sell

Price expected to fall

In an efficient market, prices will fluctuate, but will converge towards intrinsic value

WACC is the Average Required Return for a Firm



WACC depends on the Bond-Stock proportion

Proportions

All stock: 9%

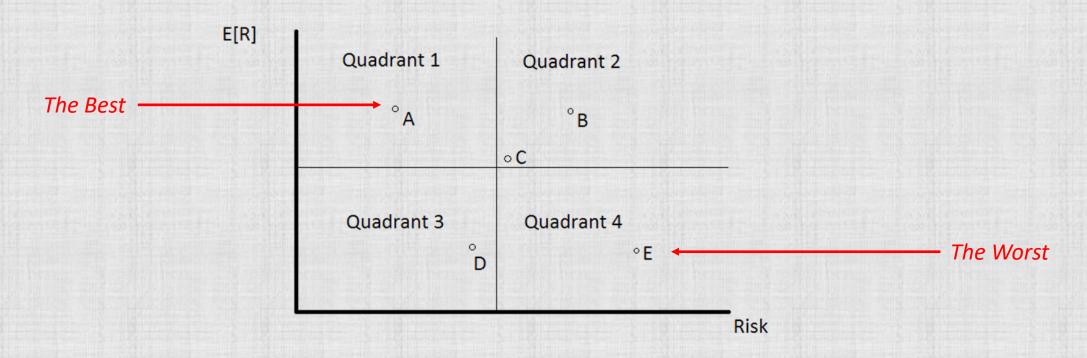
All bonds: 6%

50/50 Mix: 7.5%

WACC depends upon the proportions of bonds & stock
WACC is the overall average cost of financing for the firm

Maximize the "Return-to-Risk" Ratio

For a given level of risk, investors will pick the investment with the highest Expected Return



Best choice: A, highest ratio of Return-to-Risk

Worst choice: E, lowest ratio of Return-to-Risk

Investors will always choose the upper-left quadrant

Gordon Growth Model

Stock Price = Expected Dividend / (Required Return – Growth Rate)

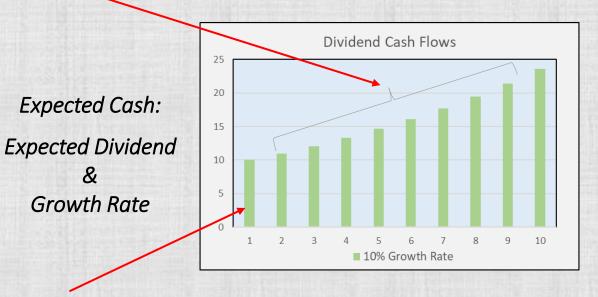
Stock Price = PV of expected Dividends

Assumes dividends increase at a steady growth rate forever

Uncertainty: Growth Rate of Dividends???

Rate of increase: Growth Rate

Expected Dividend





Sustainable Growth Rate (SGR)

SGR is the growth rate of sales that can be funded without external financing

SGR is supported by CFO (cash flow operations)

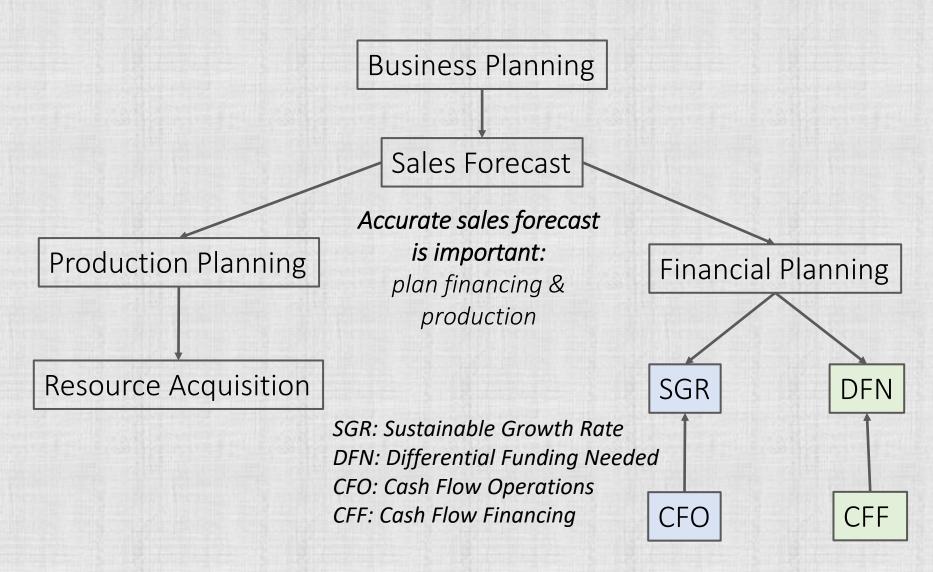
If a firm has \$10 million of net income, \$50 million of equity, and pays \$3 million in dividends, what is its SGR?

ROE =
$$10/50 = 20\%$$

Payout Ratio = $3/10 = 30\%$
SGR = $0.20 * (1 - 0.30) = .20 * .70 = .14$ or 14%

Financial Forecasting

Section 10 in E-Text



Capital Budgeting:

Initial Cash Out-Flow (ICF)

Initial Cash Out-Flow = Cost of Asset + Shipping & Installation + Increase NWC

Assume:

Equipment purchase price: 400,000

Shipping & Installation: 50,000

Net Working Capital Increase: 100,000

ICF = 400,000 + 50,000 + 100,000 = 550,000 outflow

ICF is a negative cash flow

GAAP defined

Cash Outflow

Capital Budgeting:

Terminal Cash Flows (TCF)

Terminal Cash In-Flows = Salvage Value - Taxes Paid + NWC "Recapture"

Assume:

= Net PPE

Equipment Sale: 100,000

Book Value:

20,000

Tax Rate:

40%

Net Working Capital Recapture: 100,000

Profit or Loss

Taxes = (Sales Price – Book Value) * Tax Rate

Taxes Paid = (100,000 - 20,000) * 40% = 32,000

TCF = 100,000 - 32,000 + 100,000 = 168,000

Cash Inflow

Reversal of Increase in NWC in ICF

Note: If Salvage sale is a "loss", there is a tax refund, i.e. cash inflow.

Q55. Adopt project if?

Rules for Adopting Potential Investments:

Internal Rate of Return (IRR) & Net Present Value (NPV)

WACC = Minimum Required Return of Investment

IRR > WACC

IRR = revenue from asset WACC = cost of funds Profit (%) = IRR minus WACC

NPV > 0, using WACC as the discount rate

NPV = PV of Cash Inflows — Initial Cash Outflow NPV (\$) = Profit

WACC: Includes Required Return on **Bonds** and Required Return on **Stock**

Best Method

Low Leverage versus High Leverage

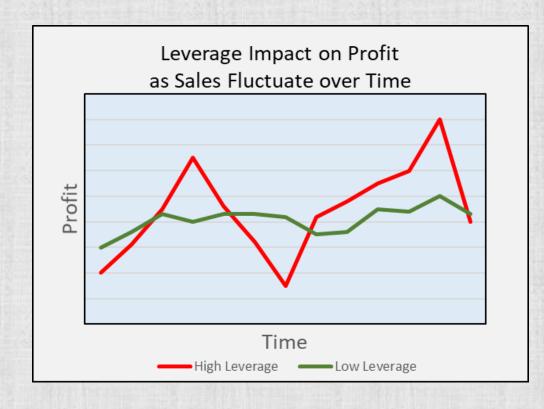








Leverage Impact on Required Return

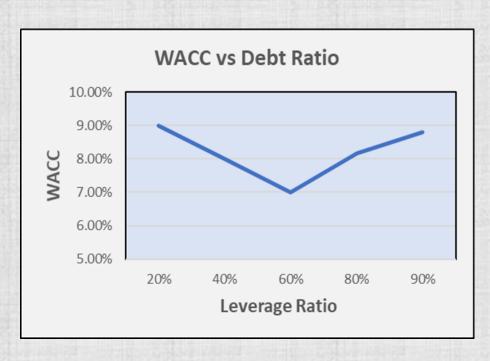


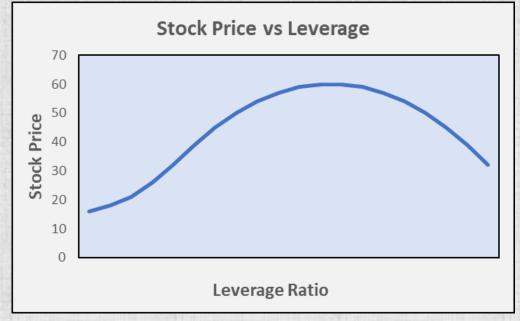


- Firms increase leverage to increase profit, but it also increases profit volatility - - increased risk!
- Profit volatility increases the required return

Leverage & Max Shareholder Value

Higher profits may <u>not</u> mean higher stock price! Does the incremental profit justify the extra risk?





WACC = Required Return

Price = Flow of Profits / (1 + Required Return)

Firms must risk & profit to maximize stock value.

Q59 Why buy back stock?

Leverage

aka business risk

Operating Leverage (DOL):

Fixed Operating Costs

Automated production:

High fixed cost

Labor Intensive production:

Low fixed cost

aka financial risk

Financial Leverage (DFL):

Fixed Interest Expense

High Debt/Equity ratio:

High fixed interest expense

Low Debt/Equity ratio:

Low fixed interest expense

Combined Leverage (DCL): Operating Leverage X Financial Leverage

Firms increase leverage to increase profitability

Risk Premiums: Credit Risk & Market Risk

Credit Risk: Chance of Bankruptcy

Bonds: Rating by S&P, Moody's

Stock: Low Equity, CFO, & EPS

Market Risk: Price Volatility

Bonds: Measured by "Duration"

Stock: Measured by "Beta"

WACC

Average of Required Returns on Stock & Bonds

Overall cost of financing the firm

Minimum Required Return on Investment Projects

Working Capital Management Section 13 in E-Text

Managing Current Assets & Current Liabilities

Management Decisions:

Cash

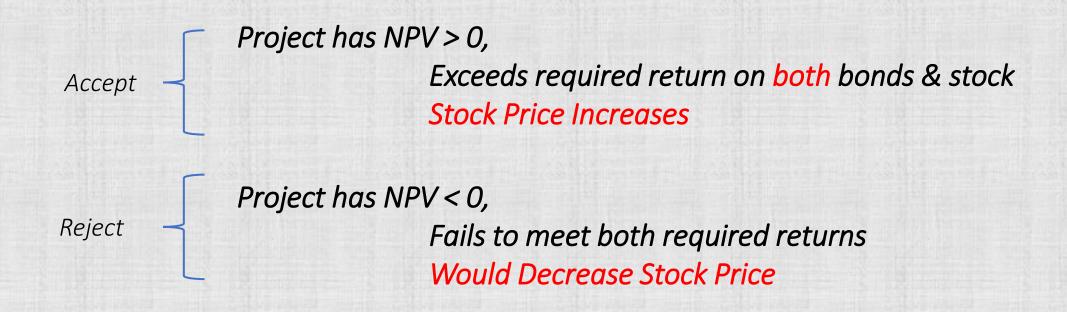
Accounts Receivable

Inventory

Accounts Payable

Investment Valuation

NPV > 0, using WACC as the discount rate



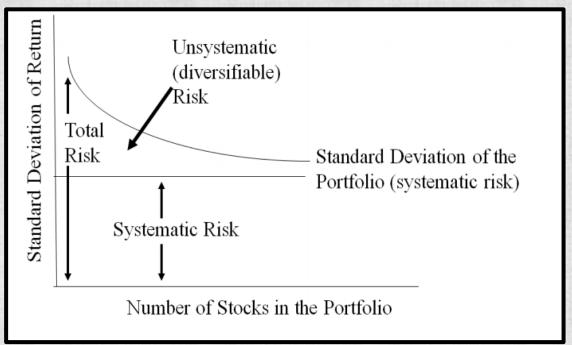
NPV > 0 means that the project increases the value of the firm

Capital Asset Pricing Model: CAPM

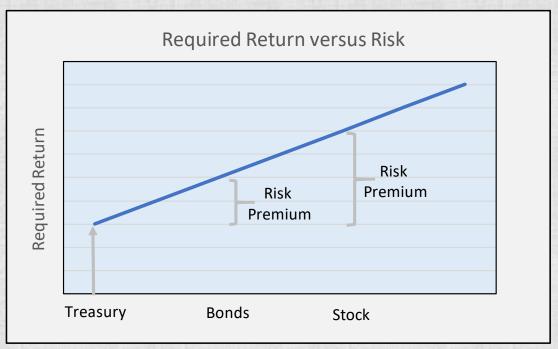
Required Return = Risk-Free Rate + (Beta * Market Risk Premium)



Diversification eliminates idiosyncratic risk







[Beta * Market Risk Premium]: Risk Premium of a specific stock

4. Uncertainty & Risk Aversion

Financial Decisions are impacted by:

- > Uncertainty
- > Risk Aversion

Uncertainty:

Some inputs are forecasts Some inputs are estimates

Forecasted future cash flows
Growth rate of profits

Risk Aversion:

Reaction to Uncertainty
Degree of risk aversion varies

Conflicting decisions may both be "right"

Finance formulas express conceptual frameworks - - "first step in wise decision-making."

Key Legislative & Regulatory Factors

Securities Markets:

- Securities Act of 1933 Requires *Prospectus* for security issuance
- SEC requires audited financial statements; regulates security trading
- Sarbanes Oxley Act transparency, audit of financial controls
- FINRA check sales practices; bar unethical persons; competency test
- Rule 144A Sell private securities in U.S. to U.S. investors
- Reg S Sell private securities off-shore to foreigner investors

Banking Regulations:

- Dodd Frank addresses "too big to fail" banks; enhanced supervision
- FSOC Financial Stability Oversight Council regulates "systemic" risk
- Volker Rule Limits proprietary/hedge fund trading by banks

Transparency

Protect Investors

"unregulated" markets

Limit Risk

Hedging FX Risk

Hedging: transaction to reduce risk

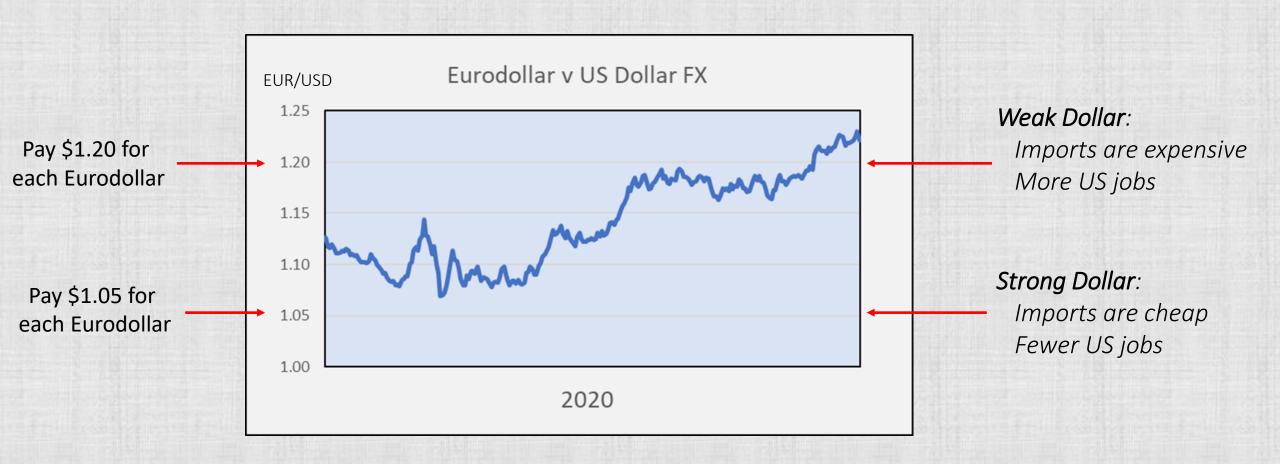
Firms hedge that risk through 2 types of transactions:

- FX forward contracts (trade between 2 companies)
- FX futures contracts (trade executed on exchange)

Execute FX hedge with FX Dealer to eliminate risk FX risk is eliminated, for a fee!

Q67 Impact of strong dollar?

Strong Dollar vs Weak Dollar U.S. Dollar vs Eurodollar



Strong Dollar: Can buy imported products cheaply

Key Issues in International Trade

U. S. Outsourcing: Using Foreign Suppliers
Fewer U.S. jobs
Cheaper consumer goods

Foreign Competition: Compete with Domestic Firms
Fewer U.S. jobs
Cheaper consumer goods

Tariffs: Tax on Imported Goods

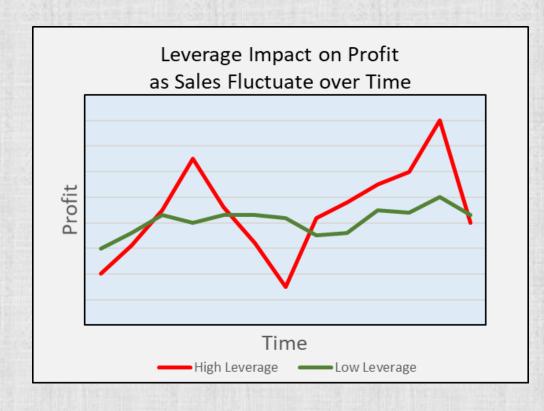
More U.S. jobs & profits

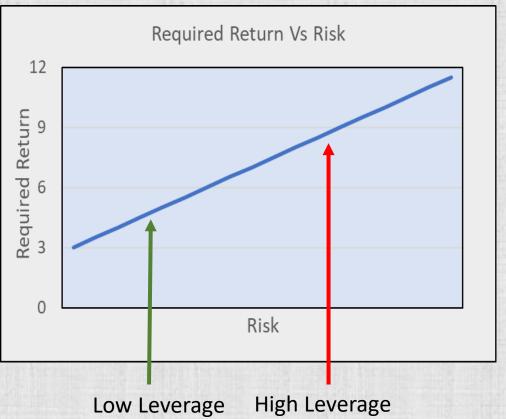
More expensive consumer goods

Tariffs:

Good for protected firms
Bad for the economy

Q69 Impact of high leverage? Leverage Impact on Required Return





- Firms increase leverage to increase profit, but it also increases profit volatility
 - Profit volatility increases the required return

Is International Business Good?

Comparative Economic Advantage

Each country produces where it is *relatively efficient*

U.S. produces & exports farm products to China

China produces & exports manufactured goods to U.S.

Both countries benefit

3. TVM: Bonds, Stocks, & Capital Budgeting

All three are the same PV problem; just different words

PV = FV / (1 + Required Return)

<u>Year</u> <u>Cash</u>		Bonds	Stocks	Capital Budgeting
0	(550)	Price	Price	Initial Cash Flow
1	125		HARLONS, AND ELECTRICAL SERVICES A	
2	125	Interest	Dividends	Differential Cash Flows
3	125			
4	125			
5	125 + 168	Face Value	Sale Price	Terminal Cash Flow
Discount Rate		Yield	Required Return	WACC
PV		Price	Price	Net Present Value

Present Value of expected cash flows, discounted at Required Return

Q72 Important Cash attributes?

3. TVM: Bonds, Stocks, & Capital Budgeting

All three are the same PV problem; just different words

PV = FV / (1 + Required Return)

<u>Year</u> <u>Cash</u>	Bonds	Stocks	Capital Budgeting
0 (550)	Price	Price	Initial Cash Flow
1 125	PROCESS AND SERVICES		\$P\$主任存为 \$素 \$E\$ 學工 并完全转应的医力相关的主任存为 \$素 \$E\$ 学工并完全转位的
2 125	Interest	Dividends	Differential Cash Flows
3 125			
4 125 5 125 + 168	Face Value	Sale Price	Terminal Cash Flow
Discount Rate	Yield	Required Return	WACC
PV	Price	Price	Net Present Value

Present Value of expected cash flows, discounted at Required Return

Q73 Why sensitivity analysis?

"Forecasts" are error-prone:

Scenario Analysis tests for impact of forecast error.

What could go wrong?

Decision-Making Under Uncertainty

Scenario Analysis

Year	Pessimistic	Forecast	Optimistic
0	(500,000)	(500,000)	(500,000)
1	100,000	125,000	137,500
2	100,000	125,000	137,500
3	100,000	125,000	137,500
4	100,000	125,000	137,500
5	254,400	293,000	312,300
WACC	8.14%	8.64%	9.14%
IRR	5.22%	11.74%	14.85%
NPV	(47,794)	51,792	95,771
Probability	20%	65%	15%

aka
Sensitivity analysis
Simulation analysis
Stress Test

Expected NPV = 38,472

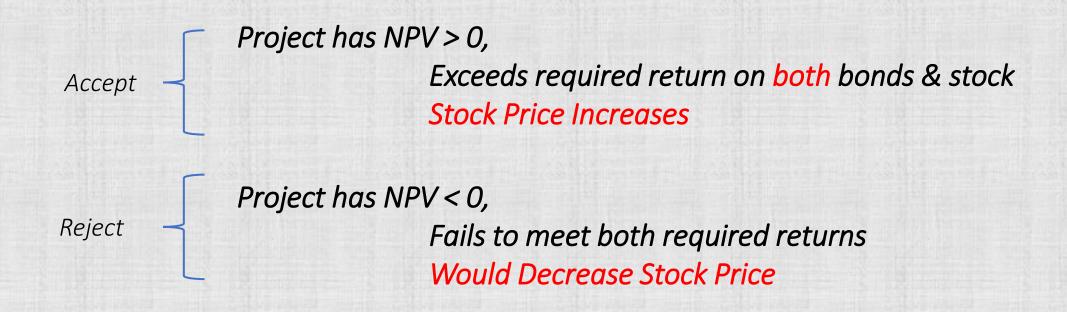
Accept or Reject???

> Depends upon the Risk-Return preferences of the firm

Highly Risk Averse? - or - Risk Tolerant?

Investment Valuation

NPV > 0, using WACC as the discount rate



NPV > 0 means that the project increases the value of the firm

Firm Goal: Maximizing Shareholder Value



Firms must balance risk & return to maximize stock value.