

# Understanding Risk To Help You Invest Soundly Part II



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## Section 2 - Risk With Investing In Capital Markets

- ❖ Risks with Bonds
- ❖ Risks with Stocks
- ❖ Risks with Investment Companies
- ❖ Investment Risk

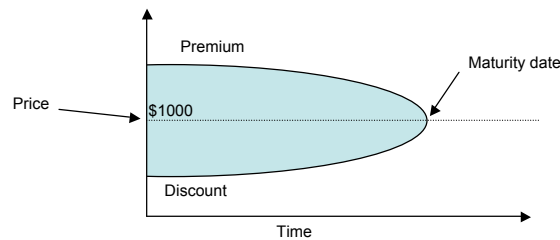
## Risks with Bonds

### Buying and Holding (income generating)

- ❖ If bonds are bought and held until maturity you know exactly what your ROI will be.

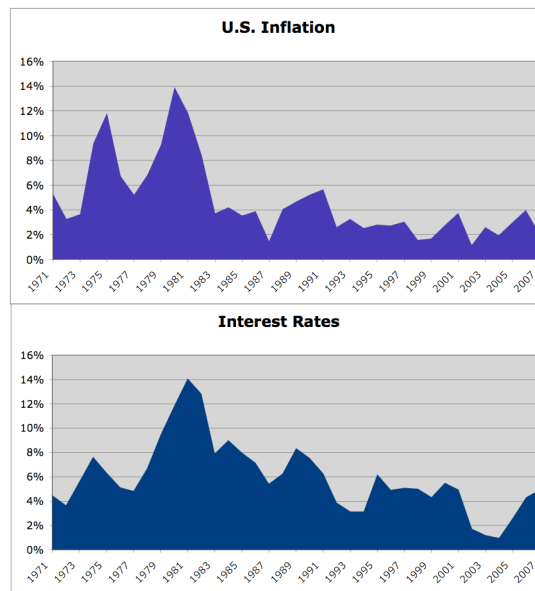
### Trading Bonds (speculative)

- ❖ The market value of a bond is affected by changes in interest rates. As the maturity date approaches the market value will approach the face value of the bond.



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## Taming Inflation and Interest Rates



<http://research.stlouisfed.org/fred2/>

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## Risks with Bonds

❖ Default Risk - risk of the company becoming insolvent i.e. unable to pay debts.

**Note: only corporate issued debt**

❖ Interest Rate Risk - comes from interest rates moving up rendering your bond less valuable.

❖ Reinvestment Rate Risk - When bonds pay coupons those coupon payments might need to be reinvested. If rates have dropped then they will be reinvested at a lower rate than the coupon rate.

❖ Options - Callable options give the issuing company the right to pay you back your principal and call the bond.

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## Default Risk

Q: If a company defaults where are we in line?

Ans: Behind bankers, ahead of preferred and common share holders.

Q: In case of default what of my principal would I get back?


Ans: Depends on many factors. Assets the company has. Will they rise out of bankruptcy? Will someone with deep pockets step in and rescue the company?

Q: How can we gauge Default Risk?

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# Rating Agencies

Moody's.com STANDARD & POOR'S

Increasing Risk 	Investment Grade	Aaa	AAA	The obligor's capacity to meet its financial commitment on the obligation is extremely strong.
		Aa	AA	The obligor's capacity to meet its financial commitment on the obligation is very strong.
		A	A	An obligation rated 'A' is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher-rated categories. However, the obligor's capacity to meet its financial commitment on the obligation is still strong.
		Baa	BBB	An obligation rated 'BBB' exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation.
	Junk	Ba B Caa Ca	BB B CCC CC	Predominantly considered speculative with regards to paying interest and capacity to repay principal. Considered junk bonds.

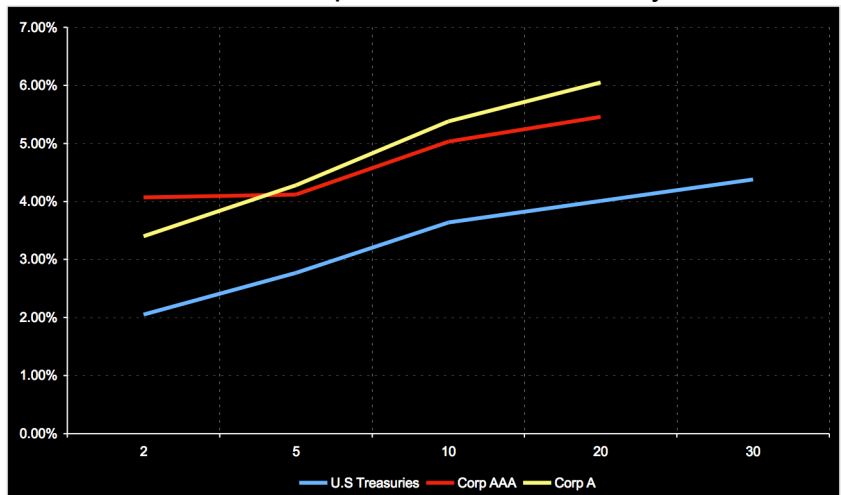
Q: What's the risk worth?

<http://personal.fidelity.com/myfidelity/email.html?http://myfidelity.members.fidelity.com/investorsWeekly/cms/FEA070504highyield.dyn.mfSessionId=FZ1VAJPWNEDE4CQBFEPCFFQ?keyword=bonds&sourcecd=FEA>

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# Price of Default Risk

U.S. Treasuries v. Corporate Yields February 5, 2008



<https://personal.vanguard.com/us/funds/bonds/bondyields>

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## Interest Rate Risk or Price Risk

### Today

You buy this bond...

Value: \$1000  
 Rating: AAA  
 Maturity: 2 Years  
 Coupon: 5%

### Next Day

Treasury rates increase...

Corporations have to pay higher returns on their new bonds to attract buyers...

So this bond is available in the market...

Value: \$1000  
 Rating: AAA  
 Maturity: 2 Years  
 Coupon: 6%

Q: How much can we sell our bond for?

Ans: We have to sell it for less so that it has an equivalent value to the new bond.

If rates ↑  
 Resell value ↓

Q: How can we measure Interest Rate Risk?

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## Bond Duration

A bond's Duration - tells us the percentage change in the price of the bond, that we could expect, if interest rates rise or fall by 1% or 100 basis points.

### Example

Issuer	Ratings Moody's/S&P	Coupon Maturity	Dur	Price	YTW
CAPITAL ONE BANK	FDIC/ FDIC	3.250 1/30/2009	0.97	100.000	3.25%
FORD MOTOR CREDIT	B1/B	7.375 10/28/2009	1.56	97.000	9.26%
INVESTORS COMMUNITY BANK	FDIC/ FDIC	3.250 2/8/2011	2.86	100.000	3.25%
GOODYEAR TIRE & RUBBER	B2/B	7.857 8/15/2011	2.96	102.750	6.97%
SBC COMMUNICATIONS (AT&T INC)	A2/A	5.100 9/15/2014	5.55	103.310	4.52%
COMCAST CORP	Baa2/BBB+	6.500 1/15/2015	5.66	107.647	5.18%
LEHMAN BROS HLDGS	A2/A	6.750 12/28/2017	7.36	106.818	5.83%
CITIGROUP (C-Z) (PFD)	A1/A	6.950 9/15/2031 - 9/15/2006	8.54	24.250	7.29%
WACHOVIA CORP (WB-S)	A2/A	8.000 PERPETUAL - 12/15/2017	10.20	26.550	7.24%
PUBLIC STORAGE (PSA-K)	Baa1/BBB+	7.250 PERPETUAL - 8/8/2011	10.58	24.600	7.41%
<b>Total Bonds</b>	<b>A3</b>	<b>6.228%</b>	<b>5.59</b>		<b>6.01%</b>

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## Laddering and Diversifying Bonds

**Client Risk Tolerance<sup>1</sup>:** Moderate  
**TFI Calculated Credit Rating<sup>2</sup>:** A3  
**Yield to Worst (YTW)<sup>3</sup>:** 6.01%  
**Effective Duration<sup>4</sup>:** 5.59  
**Average Income Per Year:** \$6,228  
**Total Cost:** \$102,752

*All price and yield calculations are as of 1/25/2008 and are subject to change.*

Amt	Issuer	Ratings Moody's/S&P	Coupon Maturity	Dur	Price	YTW
10M	CAPITAL ONE BANK	FDIC /FDIC	3.250 1/30/2009	0.97	100.000	3.25 %
10M	FORD MOTOR CREDIT	B1/B	7.375 10/28/2009	1.56	97.000	9.26 %
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400	WACHOVIA CORP (WB-S)	A2/A	8.000 PERPETUAL - 12/15/2017	10.20	26.550	7.24 %
400	PUBLIC STORAGE (PSA-K)	Baa1/BBB+	7.250 PERPETUAL - 8/8/2011	10.58	24.600	7.41 %
70M	<b>Total Bonds</b>	<b>A3</b>	<b>6.228%</b>	<b>5.59</b>		<b>6.01 %</b>

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## Risks with Stocks

We buy a stock for - capital appreciation i.e. in hopes that the company will be able to grow the economic value of the company at a compounded rate.

Stocks are risky - because of the risks associated with stocks we seem to require this compounded rate to be around 11% or better. Approximately 5 to 6 percentage points premium over Treasuries.

Stock prices rise on expectation - what analysts and investors expect to happen based on forecasting financial data, potential product rollouts, competitive edges, barriers to entry, etc.

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## Risks with Stocks

Idiosyncratic or Unique Risk - specific events that affect a single company. Firm specific risk. **Can be diversified away.**

- ❖ Legal suits
- ❖ CEO leaves
- ❖ Rogue trader gets busted
- ❖ Unsuccessful marketing campaign
- ❖ Product recall
- ❖ Accounting scandal

Market Risk or Systematic Risk - risks that affect the whole market. **Can't be diversified away. Can possibly be reduced.**

- ❖ Interest Rates
- ❖ Recession

Currency Risk - When purchasing international stocks currency exchange rates can increase or decrease the effective return. Currency exchange rates tend to be long protracted cycles not necessarily in sync with other markets.

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## Risks with Investment Companies

### Mutual Funds

- ❖ Individual stock risk - may or may not be diversified away.
- ❖ Investment officer takes another job.
- ❖ Key analyst quits.
- ❖ Internal expenses grow.
- ❖ Taxes - may be handed a capital gain without realizing a ROI.

### LPs

- ❖ Illiquid - no market for LPs and in many cases there are lockup periods.
- ❖ Opaque - can't really see what is going on under the covers and the risks that are being taken.
- ❖ Idiosyncratic Risk with Managers - even more so than with mutual funds.

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## Investment Risk

- ❖ Conceptually - when an end is known then volatility does not introduce risk. When an end is uncertain then volatility can fuel uncertainty.
- ❖ Typically, investment returns are not known with certainty.
- ❖ Investment risk is related to the chance or probability of earning less than expected.
- ❖ That is, the greater the chance of earning far less than the mean the greater the risk.

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## Return for S&P from 1997 to 2008

$$\text{Return} = \frac{\text{Ending Amount} - \text{Beginning Amount}}{\text{Beginning Amount}} * 100$$

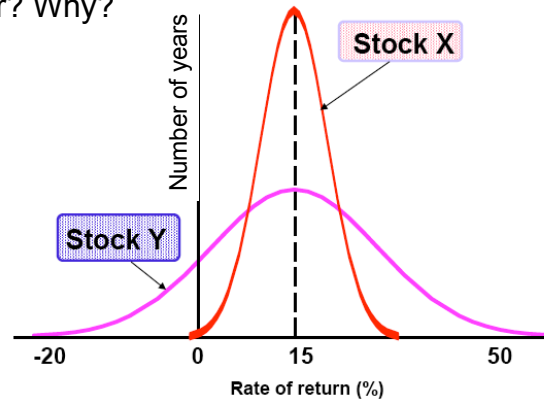
Date	Adjusted Close	return	Growth
1/2/08	1378.55	-4.15%	\$ 175.35
1/3/07	1438.24	12.36%	\$ 182.94
1/3/06	1280.08	8.36%	\$ 162.83
1/3/05	1181.27	4.43%	\$ 150.26
1/2/04	1131.13	32.19%	\$ 143.88
1/2/03	855.7	-24.29%	\$ 108.85
1/2/02	1130.2	-17.26%	\$ 143.76
1/2/01	1366.01	-2.04%	\$ 173.76
1/3/00	1394.46	8.97%	\$ 177.38
1/4/99	1279.64	30.54%	\$ 162.77
1/2/98	980.28	24.69%	\$ 124.69
1/2/97	786.16		\$ 100.00
<b>Average</b>		6.71%	
<b>Std. Dev</b>		18.21%	
<b>APR</b>		5.24%	

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## Volatility of Returns

Which stock is riskier? Why?



Key Points:

If stock price is volatile then return is volatile.

Stock prices are volatile when future earnings are uncertain.