“IT’S YOUR MONEY”

FIXED INCOME INVESTING

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Fixed Income

- What is it?
- Benefits
- Risks
- Types of bonds
- Buying and selling
- Individual bonds vs. mutual funds

What is Fixed Income?

- Another term for bonds and other interest-bearing investments
- It’s just a loan
- You lend money to
  - A company
  - A government
- They pay you interest
  - Quarterly
  - Semi-annually
  - Annually
- You get paid back in full at maturity

What is Fixed Income?

- Terms of investment return are normally fixed
  - Calculation of interest rate
  - Frequency of interest payments
  - Termination date
  - Return of principal

What is Fixed Income?

- CDs
- U.S. Treasuries / TIPS
- Mortgage-backed
- Corporate bonds
- Municipals
- Convertibles
- Zero-coupon
- International

Fixed Income Benefits

- Dependable income
  - Regular payments
  - Higher yield than cash
  - 1 – 3% above inflation rate
  - 5 – 6% over time historically
- Reduced Volatility
  - Counter-cyclical to stocks
  - Downside protection
  - Diversification
- Increased overall return
  - While reducing risk

Risks

- Credit (default) risk
- Interest rate risk (price volatility)
- Reinvestment risk
- Inflation

Risk: Credit Risk

- Measures the borrower's ability to pay you back
- Bond Rating Services
  - Standard & Poor's (S&P)
  - Moody's
  - Fitch
- Bond Rating
  - AAA
  - AA Investment Grade
  - A
  - BBB

****

  - BB
  - B High Yield or "Junk"
  - CCC
  - CC
  - C

Bond Ratings

Moody's	Standard & Poor's	Meaning
Aaa	AAA	Best quality, smallest risk. Issuers are exceptionally stable and dependable.
Aa	AA	High quality, with some slight long-term risk.
A	A	High-medium quality, with many strong attributes but somewhat vulnerable to changing economic conditions.
Baa	BBB	Lower-medium quality, currently adequate but perhaps unreliable over long term.
Ba	BB	Non-investment grade with some speculative elements. Moderate security but faces major uncertainties.
B	B	Highly speculative. Able to pay now but at risk of default in the future.
Caa	CCC	Poor quality, clear danger of default.
Ca	CC	Highly speculative quality, in or very near default with little prospect for recovery.
C	C	Lowest-rated; poor prospects of principal repayment but may still be paying interest; considered junk bonds.
N/A	D	Currently in default; junk bonds.

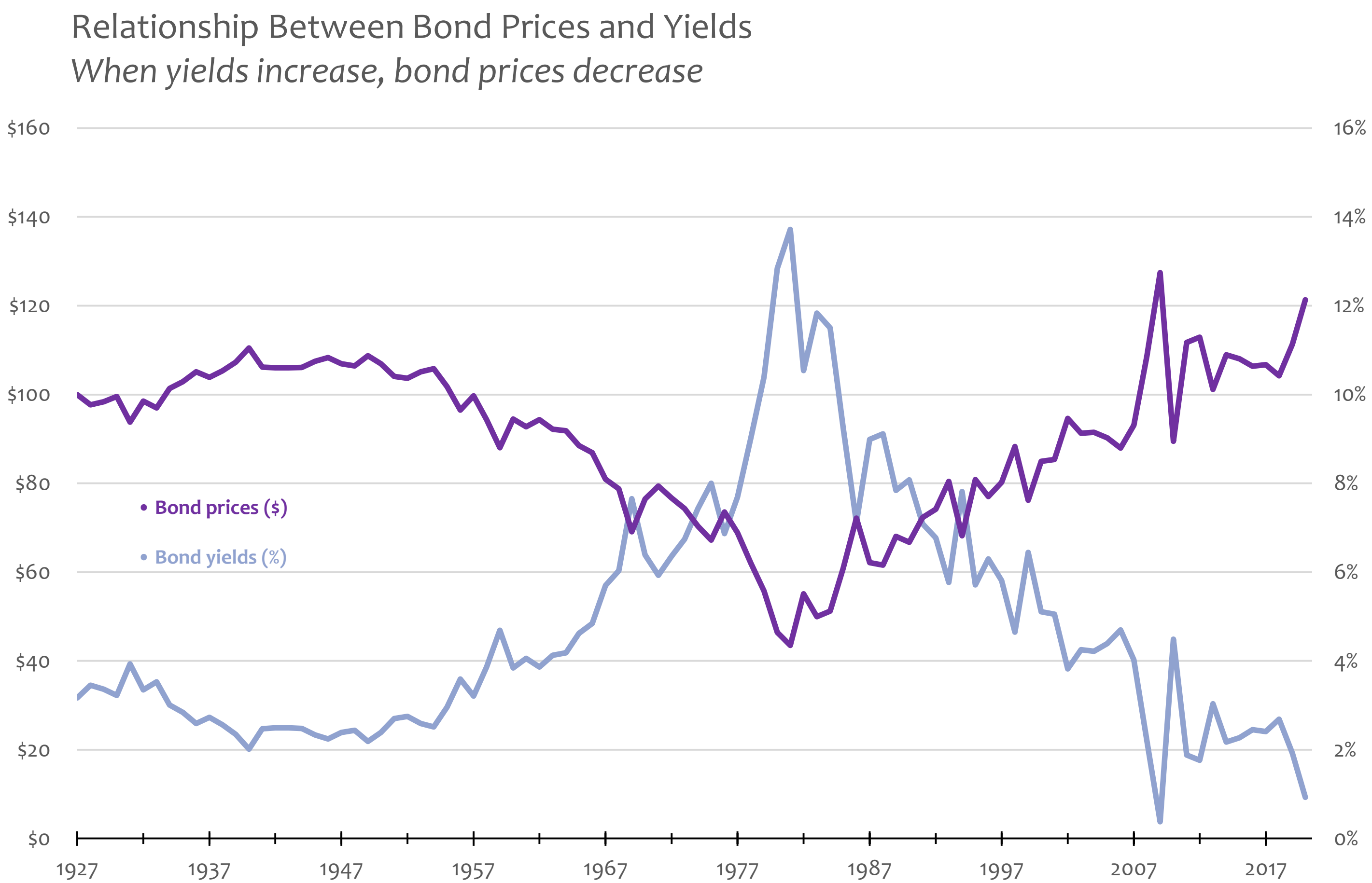
Risk: Interest Rate Risk

- As interest rates rise, bond prices fall
- As interest rates fall, bond values rise
- Example:
  - A 10-year $1,000 bond yields 5% and pays you $50 per year.
  - The next day rates go up, and new bonds are issued at 6%. You want to sell your bond. Now a 5% bond is not competitive and you have to discount your bond to sell it.
  - In order to earn a 6% yield, a buyer would only be willing to pay you $926, a loss of $74 for you.

Risk: Interest Rate Risk

- Bond prices fall when expectations for inflation rise
- Bonds with longer maturities and smaller coupon payments exhibit greater price volatility
- Selling before maturity may cause recognition of a loss (or gain)

RELATIONSHIP BETWEEN BOND PRICES AND YIELDS
WHEN YIELDS INCREASE, BOND PRICES DECREASE



Source: NYU Stern Damodaran Data Set (available at http://pages.stern.nyu.edu/~adamodar/); Tarbox Calculations through 2020

Bond Pricing

- Prices are quoted as a percentage of Face Value
  - A bond priced at 98 will cost $980 (discount)
  - A bond priced at 102 will cost $1,020 (premium)

- You purchase a 5-year par bond yielding 3%:
  - If rates rise to 4%, your bond will trade at a discount
  - If rates fall to 2%, your bond will trade at a premium

- Normal trading increments of $5,000 face value
  - Trading blocks of $25,000 to $1,000,000 can bring better pricing

Bond Interest Rates

- Coupon Yield: applied to face value
  - Only tells you how much your semi-annual payments will be
  - Useless without knowing what price you are paying for the bond

- Current Yield: coupon yield / current price
  - Links the coupon to current price, but doesn’t consider any premium or discount
  - Creates false impression of high returns when bonds are priced at a discount
  - Creates false impression of low returns when bonds are priced at a premium

Bond Interest Rates

- Yield to Maturity: Takes into account current price and any discount or premium

	Maturity	Coupon	Price	Dollar Cost	Current Yield	**Yield-to Maturity**
Bond A:	5 years	5.0%	100	$1,000	5.0%	**5.0%**
Bond B:	5 years	8.0%	113	$1,131	7.1%	**5.0%**
Bond C:	5 years	2.0%	87	$869	2.3%	**5.0%**

Risk: Reinvestment

When your bond matures, can you reinvest at a higher or lower rate of interest?

- 5-year bond at 5%…

OR

- 2-year CD at 5.5%

Which is better?

Historical 10-Year Treasury Yields

Risk: Inflation

- 10 yr bond yield 2.97%

Inflation rate	-1.80%
Real Return	1.17%

- How will inflation affect your returns?
- What if inflation rises to 5%?

Risk: Inflation

- **If you only take away one thing…**
- **Fixed income is fixed.** The more fixed income you have, the greater the chance of outliving your money!
- For example:
  - Stamps 1980 – 15 cents
  - Stamps 2010 – 44 cents
  - How will you buy a stamp 30 years from now if your income is fixed?

Types of Fixed Income – Certificates of Deposit

- Also known as “time deposits”
- Maturities range from 30 days to 5 years
- Advantages
  - FDIC insured return of principal
  - Convenience
  - Available in small increments
- Disadvantages
  - Rates are driven by the bank’s need for funds and may not reflect current market
  - Penalty may be assessed on early withdrawal

How to Buy CDs

- Banks
- Credit Unions
- Internet
  - Bankrate.com
  - Depositaccounts.com
  - Ingdirect.com
  - Emigrantdirect.com
  - Ally.com
- FDIC insured
  - Up to $250k per person
  - Beneficial owners

Types of Bonds – U.S. Treasury Securities

- Exempt from state and local taxes
- Aaa / AAA considered “risk-free”
- Included in AMT income
- Bonds – 10 to 30 years
  - Semi-annual interest payments
  - Sometimes callable
- Notes – 2 to 10 years
  - Semi-annual interest payments
  - Sometimes callable
- Bills – 4, 13, 26, or 52 weeks
  - Interest accrues and pays at maturity
  - Not callable

Types of Bonds – TIPS (Treasury Inflation-Protected Securities)

- Principal is adjusted semi-annually to reflect Consumer Price Index (CPI)
- Advantages
  - Protection against future inflation
- Disadvantages
  - CPI adjustments are taxable (phantom income)
  - Potentially lower yield in stable interest rate environment
  - www.publicdebt.treas.gov

Types of Bonds – Mortgage Backed Securities

- Government National Mortgage Association
  - GNMA or Ginnie Mae
  - www.ginniemae.gov
- Federal National Mortgage Association
  - FNMA or Fannie Mae
  - www.fanniemae.com
- Federal Home Loan Mortgage Corporation
  - FHLMC or Freddie Mac
  - www.freddiemac.com

Types of Bonds – Corporates

- Taxable – federal & state/local
- Included in AMT income
- Liquidity can be an issue
- Semioannual interest payments
- Sometimes callable
- Higher default rates than municipal bonds
- Secured vs unsecured
- Senior vs subordinate
- Convertible

Types of Bonds – Municipals

- Federally tax-exempt
- CA state tax-exempt if issued within California
- General Obligation – backed by resources of issuer (e.g. state of California)
- Revenue – backed by revenue from specified activity or project (e.g. water district bonds)
- Generally attractive for investors in the 24% tax bracket or above

Corporate or Munis? Calculate "tax-equivalent yield"

- Example: A muni bond yields 3%. You are in a 43% combined marginal tax bracket:

  3% / (1-.43) = ?

  3% / .57 = 5.2%

- You would need a taxable bond yielding at least 5.2% to beat the tax-free bond yielding 3%

Types of Bonds – Zero Coupon Bonds

- No interest payments until maturity
- Sold at a steep discount
- Advantages
  - Eliminate need to reinvest coupon payments at unknown future rates
  - Fixed total return if held to maturity
- Disadvantages
  - Income is taxable as accrued
  - Price can be highly sensitive to changes in interest rates (volatile)

Types of Bonds – Convertibles

- A corporate bond that can be converted to shares of a common stock
- Advantages
  - Upside potential of common stock
  - Downside protection of bond
- Disadvantages
  - Lower returns if markets remain stable
  - Supply and pricing issues

Types of Bonds –International

- Corporate
- Government
- Emerging markets
- Advantages
  - Diversification
  - Non-correlation
- Disadvantages
  - Currency risk
  - Political risk
  - Cost

Buying and Selling Bonds

- No Central Exchange
  - Bonds are generally bought and sold through brokerage firms
  - Different brokerage firms may offer different price quotes for the same bond
  - A brokerage firm’s desire to buy and sell a bond varies with the firm’s current inventory of bonds
  - Recognizing a ‘fair price’ requires market knowledge – quotes can vary significantly from broker to broker

Buying and Selling Bonds

- No transparency (no commissions?)
  - Brokerage firms buy and sell from their own inventory – they own the bonds
  - Bid: Price a broker will offer to buy a bond
  - Ask: Price a broker will demand to sell the same bond
  - Bid/Ask Spread: Difference between what brokerage firm paid for the bond and what firm sells the bond to you for
  - You don't know the bid/ask spread

Individual Bonds vs. Mutual Funds

- Pros and cons
  - Depends on
    - Platform and access
    - Size of portfolio
    - Interim liquidity needs

Individual Bonds

- Hold to term
  - Pay $1,000 – earn interest – get $1,000 back
  - Don't worry about interim changes in value
- Ladder them – staggered maturities
  - Short-term: <2 years
  - Intermediate-term: 2-10 years
  - Long-term: 10-100 years! (Recommend don't buy!)
- Gives you control over:
  - Credit risk
  - Interest rate risk
  - Reinvestment risk
  - Inflation risk

Individual Bonds

- Disadvantages
  - Hard to get diversification – how many can you own?
  - Expensive to buy / expensive to sell (unless you buy when issued and hold to maturity)
  - Research is intensive for little incremental return
  - You don’t get the benefit of professional management

Mutual Funds

- Advantages
  - Diversification
  - Professional management
  - Liquidity – easy to buy and sell
  - Convenience; stable distributions
- Disadvantages
  - Fees (general range: 0.25% to 1%)
  - Less direct control over investments
  - No fixed yield or maturity date*

Bond Mutual Funds

- Type of Bonds
- Issuer
  - Governments
  - Agencies
  - Corporates
  - Municipals
- Duration (or maturity)
  - Short-term
  - Intermediate-term
  - Long-term

Selecting a Bond Fund

- Current yield is not a good criterion
- Last year's performance is not a good criterion
- Watch fees! Low fee funds are usually the best long-term performers
- Read the prospectus

Selecting a Bond Fund

- What are the fund's guidelines for:
  - Average maturity. Also measured in terms of "duration." Longer maturities imply greater price volatility.
  - Credit limits. What is the lowest rating the fund can hold? What is the average credit rating?
  - Leverage. Can the fund borrow additional money to make investments? Borrowing additional funds is a more aggressive strategy.
  - Derivatives. Can the fund use derivatives? Id so, for what purpose?
- Do management fees appear reasonable? Is the fund "no load?"

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