

# Introduction to Bonds

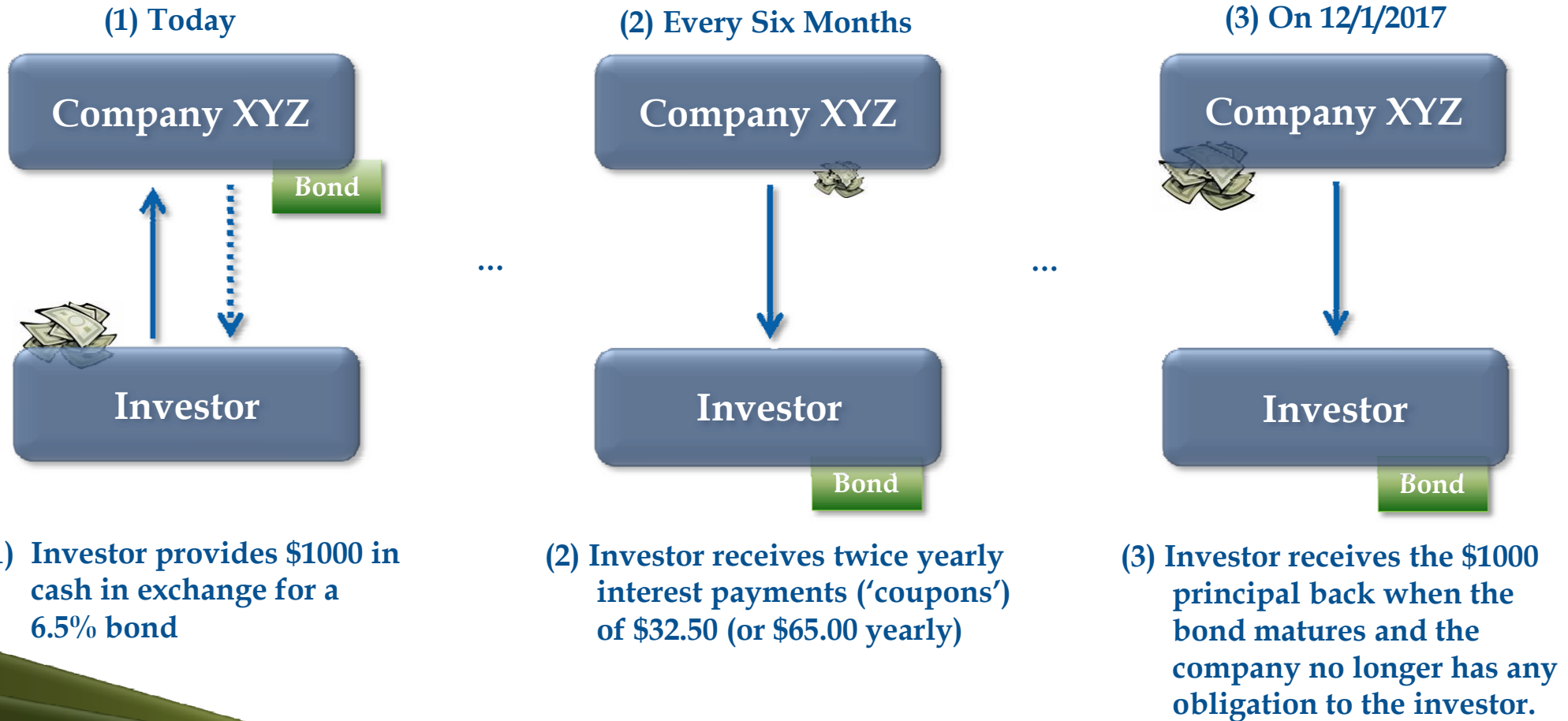
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# What is a Bond?

- At its core, a bond is simply a loan. If a company, country or city sells a bond, it is simply borrowing money at a defined rate of interest.
- An example Bond:
  - Fixed face value (usually \$1000)
    - This is the same as the 'principal' or 'par' value
  - Standard fixed rate; (for example, 6.5%)
    - Usually paid in bi-yearly 'coupons'
  - Set maturity date; (for example 12/1/2017)
    - This is the date when the bond investor receives the par value of the loan back
- A typical bond can not deny its owner a coupon payment unless the company or city that issued the bond files for bankruptcy.
  - For this reason, a bond's interest payment is considered very safe

# Our Sample Bond – A Visual

A \$1000, 6.5% bond, with a 12/1/2017 maturity date



# Some Variations

- Bonds come in many forms, below are a couple common variations to the very straightforward bond discussed on the previous page
- Variable rates of interest:
  - Not all bonds have fixed rates of interest, some may be variable.
  - Common forms of variable rate bonds can pay interest at a rate above inflation, or a rate above certain government interest rates
- Convertibility:
  - Some bonds come with rights to convert into shares of stock in the company selling the bonds
  - These kinds of bonds will usually pay a lower rate of interest because they have more upside than normal bonds don't have because they can profit if the company's shareholders do well

# Added Detail

- The following pages have some additional detail that may be of interest if you are still curious after the short bond backgrounder on the previous pages

# Bond Ratings

- Like many things in finance, with Bonds, the devil is in the details
  - Buying an individual bond requires the knowledge of the companies' financial condition, future profits, and the value of its assets
- Rating Agencies
  - As a short cut to analyzing the underlying company in detail, there are 'independent' rating agencies which provide ratings for individual company bonds
    - Moody's, Standard & Poor's, and Fitch are the biggest rating agencies
  - Ratings go from AAA to A, to BBB to B, to CCC to C, etc.
    - Each agency rates bonds slightly differently, but AAA is the highest measure, and ratings below BBB are considered 'junk' which just mean that default is somewhat likely
  - It should be noted that the rating agencies are not very independent because their fees are often times paid by the very institutions attempting to sell the bonds

# How to Buy Bonds?

- Direct Purchases

- Buying government bonds in the US is possible by going directly to the US government
  - You can buy bonds that are indexed to inflation and also normal fixed interest rate bonds
- It is possible to purchase individual corporate or city/state (municipal) bonds directly depending on who you use as a broker, but generally this is not done.
- While the examples given earlier imply that bonds are usually purchased for 100% of face value, there is no reason that a bond cannot be purchased for a discount.
  - Low rated bonds, or bonds of companies with perceived issues frequently transact for discounted prices in the secondary market.
  - Purchasing lower rated bonds at a meaningful discount to face value generally has a risk/reward more similar to stocks than what is generally ascribed to typical bond purchase.

- Mutual Fund Purchases

- The most common way to buy most bonds (Government, Corporate, and Municipal) is through a mutual fund
- Mutual fund allow for very wide diversification (you can own 50+ bonds in a single investment) and generally low cost

# General Interest Rates and Bonds

- It is important to note that all bond prices and values are strongly related to prevailing interest rates on government bonds.
- The prevailing interest rates paid by government bonds are the basis by which investors base how much to pay (or charge) for a loan or an investment
  - If the government is selling bonds that pay 6.5% interest, there is no reason why someone would buy a bond in our hypothetical company XYZ for the same 6.5% rate... they would request \*more\*
- For this reason, the prices of bonds move in the \*opposite\* direction of interest rates. What once may have been an attractive bond to buy at \$1000 for a 6.5% return may not be so good if government rates increase from 4% to 6.5%
  - So if that happens, the bond price will decline as investors require a lower price to motivate them to purchase the bond.
  - At the new lower price, the \*new\* investor will receive the same \$65 in interest each year, but they will also make a gain as the price they paid is lower than \$1000 in face value they receive at the end.
  - This lower price compensates the new buyer for the opportunity cost of not buying the higher yielding government bond

# Time Horizon, or 'Duration' Risk

- One general thing to note about bonds is that the longer in the future they mature, the more 'risky' they are (all things equal)
- For this reason, bonds that mature in 20 years will generally pay a higher rate of interest than bonds that mature in 10 years
- There is also a calculation for bonds (called 'duration') which attempts to summarize the sensitivity a given bond's price has to changes in interest rates. If interest rates change (both positive or negative) bonds that have higher durations and maturities will have wider price swings
- The actual calculation for duration is a bit complicated, but if you see it in any documents for a mutual fund, etc, it is designed to represent the % impact to a bond's price given a change in interest rates.
  - If rates go up 1%, a bond with a duration of 8 would drop 8% in value
  - If rates go down 0.75%, a bond with a duration of 8 would rise 6% in value

# Bond Resources

- Bond Prices
  - Unlike stocks, most bonds aren't easy to get prices for. This website is a helpful resource for getting information on bond prices and historical data:  
<http://www.investinginbonds.com/>
- US Government Bond Purchases
  - The government's bond website is <http://www.treasurydirect.gov>
- Bond Informational Summary
  - PIMCO is the 2<sup>nd</sup> largest manager of bonds in the world. While I can't endorse them as a business for those looking to invest, their website does contain a wealth of information about bonds and is a great resource for those interested in learning more:  
<http://www.pimco.com/LeftNav/BondResources/Default.htm>