Introduction to Bonds

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What is a Bond?

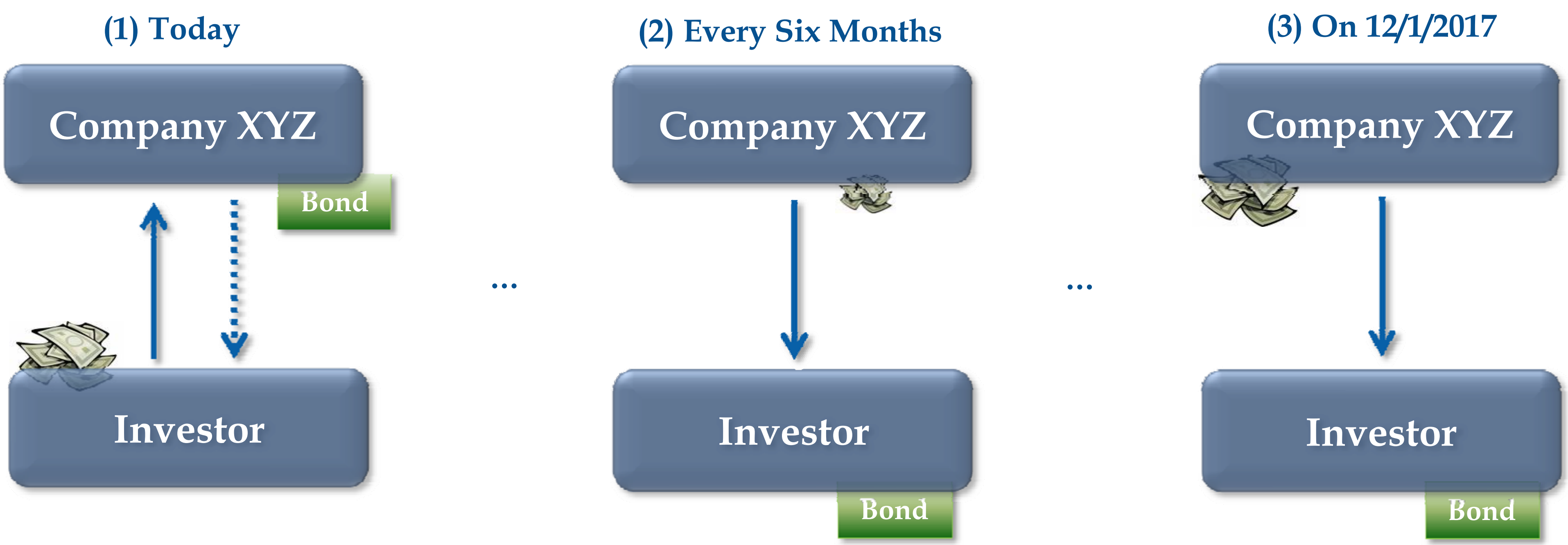
- At its core, a bond is simply a loan. If a company, country or city sells a bond, it is simply borrowing money at a defined rate of interest.

- 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



(1) Investor provides $1000 in cash in exchange for a 6.5% bond

(2) Investor receives twice yearly interest payments (‘coupons’) of $32.50 (or $65.00 yearly)

(3) Investor receives the $1000 principal back when the bond matures and the company no longer has any obligation to the investor.

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 that normal bonds don't have because they can profit if the companies 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 2nd 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