

Macroeconomics & Global Economics

Presentation 6

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Presentation based on
Blanchard, Macroeconomics: A European Perspective,
Pearson, second edition, chapter 16.

The vocabulary of bond markets

- **Default risk**, the risk that the issuer of the bond will not pay back the full amount promised by the bond.
- **Maturity**, the length of time over which the bond promises to make payments to the holder of the bond.
- Bonds of different maturities each having a price and an associated interest rate called the **yield to maturity**, or simply the yield.
- Yields on bonds with a short maturity, typically a year or less, are called **short-term interest rates**. Yields on bonds with a longer maturity are called **long-term interest rates**.

The vocabulary of bond markets

- The yield depends on the maturity of a bond. The relation between maturity and yield is called the **yield curve**, or the **term structure of interest rates** (where the word *term* is synonymous with maturity).
- Have a look at this dynamic yield curve for the US

<http://stockcharts.com/freecharts/yieldcurve.php>

The vocabulary of bond markets

- Bonds are issued by governments or by firms. If issued by the government or government agencies, bonds are called **government bonds** (also **Treasury bonds**). If issued by firms (corporations), they are called **corporate bonds**.
- Bonds are rated for their default risk by two private firms, Standard & Poor's (S&P) and Moody's Investors Service.
- **Bond ratings** range from AAA for bonds with nearly no risk of default, such as German government bonds, to C for bonds whose default risk is high.
- The difference between the interest rate paid on a given bond and the interest rate paid on the bond with the highest (best) rating is called the **risk premium** associated with the given bond. For **Treasury bonds** this risk premium is commonly known as "**spread**".
- Bonds with high default risk are sometimes called **junk bonds**.

The vocabulary of bond markets

- Bonds that promise a single payment at maturity are called **discount bonds or zero-coupon bonds**. The single payment is called the **face value** of the bond.
- Bonds that promise multiple payments before maturity and one payment at maturity are called **coupon bonds**. The payments before maturity are called **coupon payments**. The final payment is called the **face value** of the bond.
- Bonds are typically nominal bonds: they promise a sequence of fixed nominal payments – payments in terms of domestic currency.
- **Indexed bonds** are bonds that promise payments adjusted for inflation rather than fixed nominal payments.

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The stock market

- Firms raise funds in two ways: through **debt finance** – (**bonds** and **loans**); and through **equity finance**, issuing **stocks** (or **shares**). Instead of paying predetermined amounts as bonds do, stocks pay **dividends** in an amount decided by the firm.
- Dividends are paid from the firm's profits. Typically, dividends are less than profits, as firms retain some of their profits to finance their investment. BUT dividends move with profits: when profits increase, so do dividends.

The stock market

- The **price of a stock must equal the present value of future expected dividends**, or the present value of the dividend next year, of two years from now, and so on:

$$\$Q_t = \frac{\$D_{t+1}^e}{1 + i_{1t}} + \frac{\$D_{t+2}^e}{(1 + i_{1t})(1 + i_{1t+1}^e)} + \dots$$

In real terms,

$$Q_t = \frac{D_{t+1}^e}{(1 + r_{1t})} + \frac{D_{t+2}^e}{(1 + r_{1t})(1 + r_{1t+1}^e)} + \dots$$

The stock market

$$Q_t = \frac{D^e_{t+1}}{(1 + r_{1t})} + \frac{D^e_{t+2}}{(1 + r_{1t})(1 + r^e_{1t+1})} + \dots$$

- the price so determined is the **fundamental value** of the stock.
- Implications:
 - Higher expected future real dividends lead to a higher real stock price.
 - Higher current and expected future one-year real interest rates lead to a lower real stock price.

Complications: Bubbles!

- Stock prices are not always equal to their **fundamental value: stocks are sometimes under-priced or over-priced**
- Under which conditions can such mispricing occur?
The surprising answer is that it can occur even when investors are rational!!!!
- Consider the case of a truly worthless stock (that is, the stock of a company that all financial investors know will never make profits and will never pay dividends).
The fundamental value of such a stock is equal to 0.

Complications: Bubbles!

- Might you nevertheless be willing to pay a positive price for this stock? Yes, if you expect the price at which you can sell the stock next year to be higher than this year's price. And the same applies to a buyer next year: he may well be willing to buy at a high price if he expects to sell at an even higher price in the following year. **This process suggests that stock prices may increase just because investors expect them to.**

Complications: Bubbles!

- Such movements in stock prices are called **rational speculative bubbles**: financial investors might well be behaving rationally as the bubble inflates. Even those investors who hold the stock at the time of the crash, and therefore sustain a large loss, may also have been rational. **They may have realised there was a chance of a crash, but they thought there was also a chance that the bubble would continue and they could sell at an even higher price.**

Complications: Bubbles!

- **Steps of a Bubble**

1. Displacement: A displacement takes place when investors get bewitched by a new paradigm, such as an innovation (tech bubble) or interest rates that are extraordinarily low (housing bubble) or the beauty of flowers (Dutch tulip bubble).

Complications: Bubbles!

- **Steps of a Bubble**

2. Boom: Following a displacement at early stages prices increase slowly... Later on more participants enter the market, triggering the boom phase. At this stage, the asset in question attracts attention of agents fearing of missing out on what is perceived to be an once-in-a-lifetime opportunity.

Complications: Bubbles!

- **Steps of a Bubble**

3. Euphoria: in this phase caution and wisdom are fully abandoned and the price of the asset in question skyrockets.

Complications: Bubbles!

- **Steps of a Bubble**

4. Profit Taking: In this phase, the smart money* (anticipating the warning signs) starts to sell out positions and make profits. Of course, the exact time of the bubble burst is unknown and difficult to anticipate. Sometimes, very minor events can be the warning sign of the collapse.

* smart money refers to insiders and well-informed speculators.

Complications: Bubbles!

- **Steps of a Bubble**

5. Panic: In the panic stage, the price of the asset in question reverses course and collapses rapidly. Investors and speculators now are willing to liquidate the asset on the spot and at any price. As supply exceeds demand, asset prices fall sharply.

Examples of bubbles

- <http://www.investopedia.com/articles/personal-finance/062315/five-largest-asset-bubbles-history.asp>