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Financial Market and Institutions
Capital Markets

Introduction

What is a capital market?

It's where financial securities whose original maturities are more than 1 year are traded

What types of financial securities are traded in these markets?

3 categories

bonds: debt instruments of more than 1 year original time to maturity

mortgages: specialized debt, generally used to finance property purchase

stocks: shares of ownership in a corporation

(We shall only discuss bonds and stocks; read optional chapter 11 to find out more about mortgages.)

Are there both primary and secondary capital markets?

Yes. Trade in secondary markets has a much larger volume than issuance of new securities on primary markets.

What's the use of capital markets?

1. Allows individuals to invest in wealth-accumulating assets.
2. Allows businesses to fund large projects whose benefits accrue over time periods greater than a year.
3. Allows the Federal Reserve System to conduct monetary policy (through open market purchase and sale of Treasury notes and bonds on secondary markets).

Bonds

What are some categories of bonds?

1-5: Federal Government Bonds

1. Treasury Notes (T-notes)
 - Issued by the U.S. Treasury department to finance the national debt.
 - Generally, these are coupon bonds (though discount T-notes exist)
 - Original time to maturity: 1 year to 10 years
 - Virtually no default risk (so yields are low)
2. Treasury Bonds (T-bonds)
 - Issued by the U.S. Treasury department to finance the national debt.
 - Generally, these are coupon bonds (though discount T-bonds exist)
 - Original time to maturity: 10 years to 30 years

--Virtually no default risk (so yields are low)

3. Treasury STRIPS (Separate trading of registered interest and principal securities)

--Coupon payments are separated from the final face value repayment.

--Investor can buy just the coupon payments, or just the final face value payment, or both.

4. Treasury TIPS (Treasury inflation-protected securities)

--A coupon bond whose coupon payments and final repayment at maturity are indexed to inflation using the Consumer Price Index; that is, the coupon and maturity payments are increased to offset the effects of inflation.

5. Other Federal Government Agency Bonds

--Issued by various government agencies, including

--Federal National Mortgage Association (Fannie Mae)

--Federal Housing Administration (FHA)

--Student Loan Marketing Association (Sallie Mae)

--Government National Mortgage Association (Ginnie Mae)

--Very low default risk (though not as low as Treasuries)

6. State and local government bonds

6. Municipal Bonds

--Issued by state and local governments

--Some are discount bonds, some are coupon bonds

--Free from Federal income taxation

A municipal bond has a tax-free yield of 4%. What is its taxed equivalent yield for a person in the 28% Federal income tax bracket?

$$\text{Equivalent yield} = .04/(1-.28) = .05555, \text{ or } 5.555\%$$

--Some are *revenue* bonds: Repaid using a specific revenue stream available to government. Example: Tollway bonds whose repayments are made using toll revenue

--Some are *general obligation* bonds: Repaid using any old revenue available to the government.

--There is some default risk, but since the returns to these bonds are tax free, yields are low

--Default risk estimated by bond rating agencies Standard & Poor's and Moody's

7. Corporate Bonds

7. Corporate Bonds

--Often are of a type known as *registered* bonds, in which the interest payments and final face value payment are made to the person or firm registered as owner of the bond.

- Some make interest payments; some are discount bonds
- Debt issued by corporations is limited by *restrictive covenants* in the corporation's bylaws.
- Some have *call provisions*: the right of the corporation at a specified date (before the maturity date) to force the bond holder to sell the bond back to the corporation at a specified price.
 - This lets the corporation refinance debt if interest rates fall, or to rebalance their corporation finance, reducing their overall debt burden
 - Investors generally don't like call provisions, so yields on bonds with call provisions must be higher than those that have no call provisions.
- Some are *convertible* bonds: Gives the bondholder the right at some specified date to convert ownership in bonds to ownership in the corporation's stock
 - This is a valuable option, so yields on these bonds are lower.
- Some are *secured* bonds, whose payments are guaranteed with some type of collateral
- Some are *unsecured* bonds.
- Default risk estimated by bond rating agencies Standard & Poor's and Moody's
 - Those with high default risk are *junk* bonds
 - Must pay high yield

Stocks

Two types of stock

1. Common stock: represents a share of ownership of a corporation
 - Owners of common stock can vote for/against corporation's board members.
 - Some shares pay dividends—cash payments—every three months
2. Preferred stock: also represents share of ownership of a corporation
 - pays a fixed dividend
 - preferred stock owners do not vote
 - if corporation goes bankrupt and is liquidated, preferred stockholders have priority over common stockholders in getting some money for their shares (though bondholders have priority over any stockholder in getting repaid in case of bankruptcy and liquidation).

How much is a share of stock worth? Theory.

Why own a stock?

- to receive dividends
- to sell it later at a higher price

But wait! In order to sell it later at a higher price, someone must want to buy it later. So why does this person want to buy it? To get dividends and to sell it later at a

higher price. But wait! In order to sell it later at a higher price, someone must want to buy it later. So why does this person want to buy it? Etc. Etc.

So you see, it's only the potential dividends that make a share of stock valuable.

Theory: The value of a share of stock today equals the present discounted value of all dividends that it could pay in the future:

$$P_0 = \frac{D_1}{1+i} + \frac{D_2}{(1+i)^2} + \frac{D_3}{(1+i)^3} + \dots + \frac{D_\infty}{(1+i)^\infty}$$

But how can we know what dividends the company will pay in the future? We cannot know for sure. But this Gordon dude assumes that dividend payouts will grow at a constant rate, "g". Through some trick math (which we'll skip), if we assume this then the above equation becomes quite simple:

$$P_0 = \frac{D_1}{i - g}$$

Example: IBM expects to pay a dividend of \$5 a year from now. This dividend is expected to grow at 5% per year. The discount rate is 8%. In theory, what is today's value of a share of IBM stock?

$$P_0 = \frac{\$5}{.08 - .05} = \$166.67$$

How do primary stock markets work?

1. A privately-owned company that wishes to "go public"—that is, to issue shares of stock to folks to raise cash, consults an *investment banker* (such as Morgan Stanley Dean Witter or Credit Suisse First Boston), and the financial services company lines up buyers of the newly-issued stock in an *initial public offering* (IPO).

Immediately thereafter, this stock begins to trade on a secondary stock exchange.

(There are other ways to issue new stock; these ways vary by state.)

2. An existing public corporation that wishes to issue more stock hires an investment bank to do a "secondary offering," which (despite its name) is an issue of new stock shares some time (usually a few years) after the initial public offering.

What are some big U.S. Stock Exchanges (where secondary stock is traded)

Largest: *National Association of Securities Dealers Automated Quotation System (NASDAQ)*: An electronic exchange where all kinds of stock are traded. There is no “trading floor;” this is an over the counter exchange.

Second Largest: *New York Stock Exchange (NYSE)*: A stock exchange with a trading floor, where traders (who must purchase “trading seats”) trade stock for others.

Third Largest (though much smaller than the other two): *American Stock Exchange (AMEX)*: Another stock exchange with a trading floor. AMEX is owned by NASDAQ.

How can we tell how stock prices, on average, are doing over time?

Stock market indexes. 3 examples of zillions of stock indices:

The Dow Jones Industrial Average (DJIA, “the Dow”): Measures how the prices of 30 large company stocks (meant to be representative of all U.S. corporations) rise and fall, on average, over time.

The NASDAQ composite: Measures how the prices of all (5000 or so) stocks traded on NASDAQ rise and fall, on average, over time.

The S&P 500 Index: Measures how the prices of 500 large company stocks (meant to represent all U.S. corporations) rise and fall, on average, over time.

How Can Americans Trade Foreign Stocks?

American Depositary Receipts (ADRs): U.S. financial companies buy shares of foreign stock on foreign stock markets, then put the shares in their vaults and issue receipts against the stocks’ values. these receipts are traded on U.S. stock exchanges (most notably on the AMEX).

What are stock mutual funds (also called equity mutual funds)?

A bunch of individual investors give cash to the mutual fund, pooling their purchasing power. The mutual fund then buys a basket of stocks that each individual would be unable to afford by herself. Different mutual funds invest in different types of stocks; there are “technology” mutual funds that invest in stocks of technology companies, “index” mutual funds that invest in all stocks contained in a particular stock market index, “international” mutual funds that invest in foreign stocks, etc.