

Quantitative finance

Lecture 8

Equity Derivatives: Warrants

- Warrants
 - An options issued by a company giving the holders the right to buy its common stock
 - Normally issued with bonds

Equity Derivatives: Options

- Equity-derivative securities which have a claim on the common stock of a firm
- Rights to buy or sell common stock or other underlying assets at a stated price for a period of time
 - Puts are options to sell
 - Calls are options to buy

Futures Contracts

- Exchange of a particular asset at a specified delivery date for a stated price paid at the time of delivery
- Deposit (10% margin) is made by buyer at contract to protect the seller
- Commodities trading is largely in futures contracts
- Current price depends on expectations
- Example: Corn, soybeans, oil

Financial Futures

- Recent development of contracts on financial instruments such as T-bills, Treasury bonds, and Eurobonds
- Traded mostly on Chicago Mercantile Exchange (CME) and Chicago Board of Trade (CBOT)
- Allow investors and portfolio managers to protect against volatile interest rates
- Currency futures allow protection against changes in exchange rates
- Various stock futures on market indexes such as the S&P 500 and Value Line Index

Investment Companies

- Mutual Funds
 - Rather than buy individual securities directly from the issuer they can be acquired indirectly through shares in an investment company
 - Investment companies sell shares in itself and uses proceeds to buy securities
 - Investors own part of the portfolio of investments

Investment Companies

- Money-Market Funds
 - Acquire high-quality, short-term investments
 - Yields are higher than normal bank CDs or GICs
 - Typical minimum investment is \$1,000
 - No sales commission charges
 - Withdrawal is by cheque with no penalty
 - Investments usually are not insured
 - Total value reached more than \$2.5 trillion in 2007

Investment Companies

- Bond Funds
 - Invest in long-term government or corporate bonds
 - Vary in bond quality from risk-free government bonds to high-yield or junk bonds
 - Expected returns also differ reflecting the risk level of bonds in the fund

Investment Companies

- Bond Funds
 - Invest in a combination of stocks and bonds depending on their stated objectives
 - Numerous non-stock indexes including various bond indexes have been created

Investment Companies

- Index Funds
 - These are mutual funds created to track the performance of a market index like the S&P/TSX Composite
 - Appeal to passive investors who want to simply experience returns equal to some market index
 - Lower costs to investors as management expense fees are lower than actively managed mutual funds