

FN 201 : Lecture Note 10

Hybrids, derivatives, and risk management

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Outline

1. Warrants
2. Convertible Securities
3. Options
4. Futures and forwards

Warrants

= the **option to purchase** a given number of shares of stock at a given price

- **Detachable warrant** = sold separately from the bond with which it is associated
- **Nondetachable warrant** = sold with its bond to be exercised by the bond owner simultaneously

Warrants vs. Stock Rights

Stock right = give to current stockholders (shorter duration than warrant)
= may either exercise them by purchasing new shares or sell them in the market

Warrants Valuation

Value of a warrant (formula price)

= (Market price per share - Exercise price)

X (Number of shares that may be purchased through exercise of the warrant)

Note that the formula value is typically less than the market price of the warrant. This is because the speculative appeal of a warrant permits the investor to obtain a good degree of personal leverage.

Price of Warrant = Formula price + Premium

Warrants Valuation Example

Example:

- A warrant for XYZ stock gives the owner the right to buy one share of common stock at \$25 a share. If the market price of the common stock is \$53, what is the value of warrant? If the stock is selling at \$21 a share, what is the value of warrant?

Warrants

Advantages:

1. They allow for balanced financing between debt and equity.
2. They permit the issuance of debt at a low interest rate.
3. They serve as a “sweetener” for an issue of debt or preferred stock

Disadvantages:

1. When exercised they will result in a dilution of common stock.
2. They may be exercised at a time when the business has no need for additional capital.

Convertible Securities

= one that may be exchanged for common stock by the holder according to agreed upon terms (i.e. convertible bonds and convertible preferred stock)

Example:

- A \$1,000 bond can be convertible into 30 shares of stock.
- A share of convertible preferred stock with a par value of \$50 can be convertible into four shares of common stock.

Therefore, the **conversion ratio** and the **conversion price** are set at the time the convertible security is issued

$$\text{Conversion ratio} = \frac{\text{Par value of convertible security}}{\text{Conversion price}}$$

Convertible Securities

From **conversion ratio (= number of stocks)**, we can calculate for

Conversion value of bond = common stock price x conversion ratio

When a convertible security is issued, it is priced higher than its conversion value. The difference is referred to as the *conversion premium*.

$$\text{Percentage conversion premium} = \frac{\text{Market value} - \text{Conversion value}}{\text{Conversion value}}$$

Example: LA Corporation issued a \$1,000 convertible bond at par. The market price of the common stock at the date of issue was \$48. The conversion price is \$55.

Convertible Securities vs. Call Provision

Example:

At the date a \$1,000 convertible bond (zero coupon) is issued, the market price of the stock is \$18 a share. Each \$1,000 bond is convertible into 50 shares of stock.

- a. Will investor have incentive to convert bond this time?
- b. What are conversion price and conversion value?
- c. Assume the stock price is growing at 10% each year, at which year the investor should convert his bond?
- d. What possible strategy should company use to manage this type of bond?

Convertibles versus Warrants

The differences between convertibles and warrants are as follows:

1. Exercising convertibles does not generally provide additional funds to the firm, while the exercise of warrants does.
2. When conversion takes place the debt ratio is reduced. However, the exercise of warrants adds to the equity position with debt still remaining.
3. Due to the call feature, the company has greater control over the timing of the capital structure with convertibles than with warrants.

Options

= a contract to give the investor the right – but *not an obligation* – to buy or sell something

1. A specified number of shares of stock
2. At a fixed price per share, called **strike or exercise price**
3. For a limited length of time.

Call options = the right to **PURCHASE** stock at a fixed price

Put options = the right to **SELL** stock at a fixed price

Options

In-the-Money and Out-of-the-Money

Comp Inc. Puts and Calls at 50 Strike Price		
	Stock Price	
	<u>Calls</u>	<u>Puts</u>
In-the-money	Over 50	Under 50
At-the-money	50	50
Out-of-the-money	Under 50	Over 50

Value of call = (Market price of stock – Exercise price of call) x #Stocks

Value of put = (Exercise price of put – Market price of stock) x #Stocks

Note that options are usually priced higher than the above values!

Options Example

- Assume that the market price of a stock is \$45 with a strike price of \$40. What is the value of call option?
- Assume a 2-month call option allows you to acquire 500 shares of XYZ Company at \$20 per share. What is about the decision when market price may be at \$38 or \$20? Gain or loss?
- Assume the market price of a stock is \$53 and the strike price of the put is \$60. What is the value of put option?
- Assume that a put has a theoretical value of \$1,500 and a price of \$1,750. How much does investor need to pay investment premium, and how many percent?

Futures and Forward Contracts

Futures

= a contract to purchase or sell a given amount of an item for a given price by a certain date (in the future – thus the name “futures market”)

Forwards

= similar to *futures* but are not uniform or standardized. They are not traded on exchange

Futures vs. Forward Contracts

Futures Contracts

1. Standardized contracts in terms of size and delivery dates.
2. Standardized contract between a customer and a clearinghouse.
3. Impossible to reverse a contract.
4. All contracts are marked to market; profits and losses are realized immediately.
5. Margins must be maintained to reflect price movements.

Forward Contracts

1. Customized contracts in terms of size and delivery dates.
 2. Private contracts between two parties.
 3. Contract may be freely traded on the market.
 4. Profit or loss on a position is realized only on the delivery date.
 5. Margins are set once, on the day of the initial transaction.
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Risk Management and Analysis

1. Identify the risks faced by the company.
2. Gauge the potential impact of each risk.
3. Decide how each relevant risk should be handled. Risk exposure can be reduced by buying an insurance policy and/or by hedging by means of derivatives such as futures and options.

Question?