



# *Specific Issues in Valuation*



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# Valuing the Copyright on a Book

- Assume that McGraw Hill is approached by another publisher that is interested in buying the copyright to the book (Financial Accounting for Management by Ramachandran & Co).
- What are the assumptions to be made?
- The book is expected to generate Rs. 150,000 in after-tax cash flows for the next three years and Rs. 100,000 a year for the following two years. These are the cash flows after author royalties, promotional expenses, and production costs.
- About 40% of these cash flows are from large organizations that make bulk orders and are considered predictable and stable. The cost of capital applied to these cash flows is 9%.

# Valuing the Copyright on a Book

- The remaining 60% of these cash flows are to the general public, and this segment of the cash flows is considered much more volatile. The cost of capital applied to these cash flows is 13%.
- The value of the copyright can be estimated using these cash flows and the cost of capital that has been supplied.

<b>Year</b>	<i>Stable Cash Flows</i>	<i>PV@9%</i>	<i>Volatile Cash Flows</i>	<i>PV@13%</i>
1	60,000	55,046	90,000	79,646
2	60,000	50,501	90,000	70,483
3	60,000	46,331	90,000	62,375
4	40,000	28,337	60,000	36,799
5	40,000	25,997	60,000	32,566
<b>Total</b>		206,212		281,868
				488,080

# Brand Valuation Approaches ...

- Historical cost approach
- Discounted cash flow approach
  - Comparison to generic company (using excess returns approach)
  - Two assumptions: (a) brand is the only reason for the difference; (b) there will be an impact on its profit margins and growth rates (but no impact on its cost of equity)

# P/S Ratios

- For a stable firm
  - $P_0/S_0 = (\text{profit margin} \times \text{payout ratio}) / (k_e - g)$
  - P/S for a high growth firm can also be computed
  - Expected growth rate = Retention ratio  $\times$  profit margin  $\times$  (Sales/BV of equity)
  - Value of a brand name =  $(P/S_b - P/S_g) \times \text{Sales}$
  - We gave a try using data of three rice processing companies ...
  - Can you guess some basmatic rice brands
  - ... packed and to be cooked rice

# Brand Valuation continues ...

- We took three publicly listed players
  - Chaman Lal Sethia Exports (Maharani Brand)
  - Satnam Overseas renamed ... Kohinoor Foods (Kohinoor Brand)
  - K R B L (Lal Quila Brand)

FY2007	Kohinoor	KRBL	Chaman Lal
Brand Name	Kohinoor	Lal Quila	Maharani
Revenues (Rs. Crores)	589	918	94
Operating Margins (after-tax)	8.59%	12.04%	5.28%
Return on Capital (after-tax)	9.37%	15.22%	10.43%
Source: Moneycontrol.com			

<b>Firm</b>	<b>Kohinoor Foods</b>	<b>Chaman Lal Sethia</b>
Sales	589.00	94.00
Net Profit	22.07	2.25
Book Value of Equity	141.63	22.54
No of Shares	1.96	0.95
Dividend	2.29	
Beta	0.83	<b>0.83</b>
Price	73.05	31.30
<b>Profit Margin</b>	3.75%	2.39%
Divident Payout Ratio	10.38%	<b>10.38%</b>
Period of High Growth	7	7
Growth Rate Estimation	13.97%	8.95%
Estimated Growth Rate after 7	6.00%	
Expected Payout (after 7 years	48.07%	48.07%
Cost of Equity	12.48%	12.48%
P/S Ratio	0.352	0.166
Satnam's Market Capitalization	143	
Value of the Brand (Computed)	109	76%
<i>Assumptions</i>		
<i>* 7 years first phase, second phase growth of 6%</i>		
<i>** payout ratio and cost of equity of the branded product taken</i>		

<b>Firm</b>	<b>K R B L</b>	<b>Chaman Lal Sethia</b>
Sales	918.00	94.00
Net Profit	49.51	2.35
Book Value of Equity	312.00	23.00
No of Shares	2.43	0.95
Dividend	5.99	
Beta	0.97	<b>0.97</b>
Price	109.10	31.30
<b>Profit Margin</b>	5.39%	2.50%
Divident Payout Ratio	12.10%	<b>12.10%</b>
Period of High Growth	7	7
Growth Rate Estimation	13.95%	8.98%
Estimated Growth Rate after 7 yea	6.00%	
Expected Payout (after 7 years) fo	44.99%	44.99%
Cost of Equity	13.34%	13.34%
P/S Ratio	0.411	0.142
KRBL's Market Capitalization	265	
Value of the Brand (Computed)	247	93%
<i>Assumptions</i>		

\* 7 years first phase, second phase growth of 6%

\*\* payout ratio and cos of equity of the branded product taken



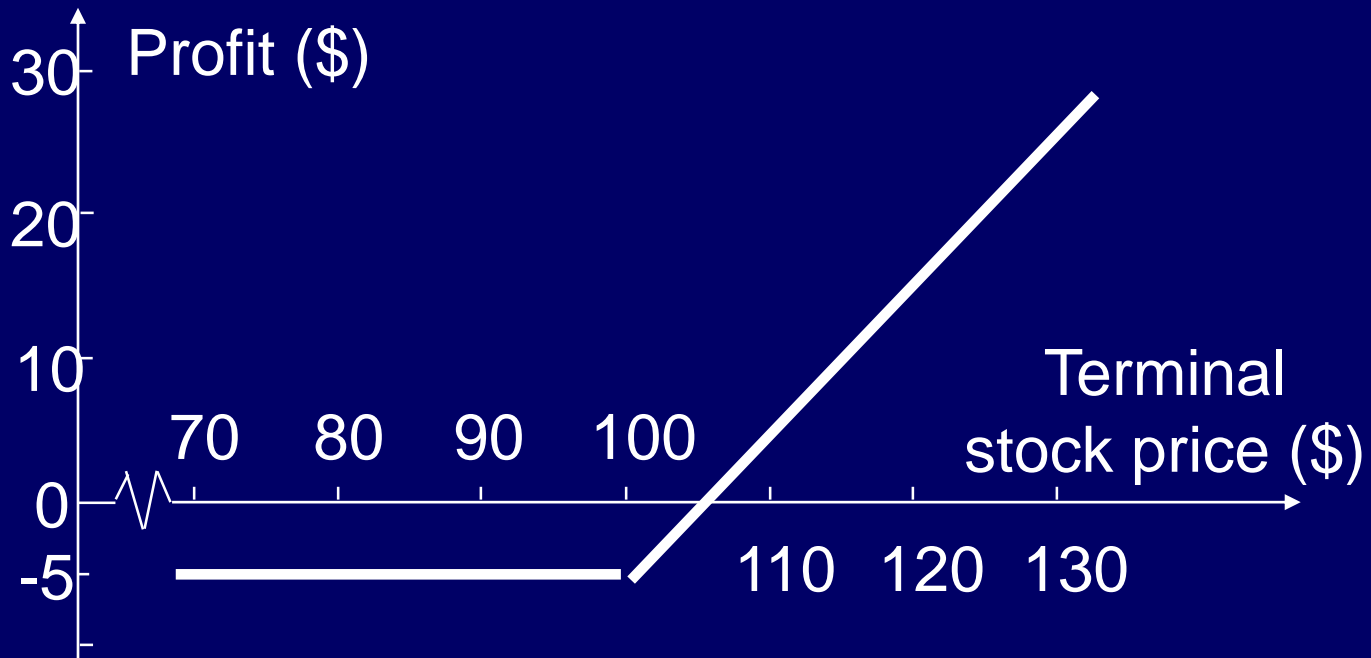
# Terminology

- An option is defined as a right, but not an obligation, to buy or sell underlying assets at a fixed price during a specified time period.
- The fixed price is called the exercise price
- Call Option – Right to buy an asset at a specified exercise price on or before the exercise date.
- Put Option – Right to sell an asset at a specified price on or before the exercise date.

# Long Call on IBM

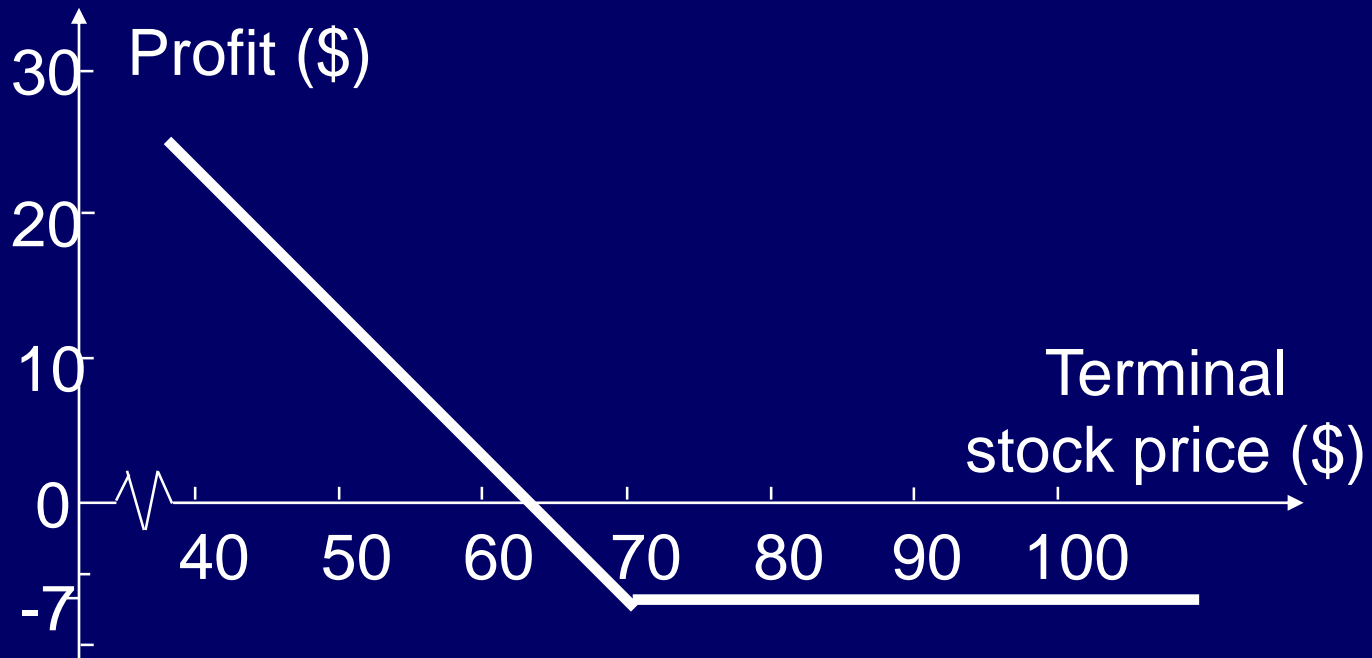
(Figure 1.2, Page 7, of 'Option, Futures, and other derivatives' 4<sup>th</sup> edition, John C. Hull, 1999)

Profit from buying an IBM European call option: option price = \$5, strike price = \$100, option life = 2 months



# Long Put on Exxon (Figure 1.4, page 8, of 'Option, Futures, and other derivatives' 4<sup>th</sup> edition, John C. Hull, 1999)

Profit from buying an Exxon European put option: option price = \$7, strike price = \$70, option life = 3 mths



# Long Call Option Value depends on ...

Price of an underlying asset

- Positive

Exercise Price

- Negative

Variability of returns

- Positive

Time left for expiration

- Positive

Risk free interest rate

- Positive

# Long Put Option Value depends on ...

Price of an underlying asset

- Negative

Exercise Price

- Positive

Variability of returns

- Positive

Time left for expiration

- Positive

Risk free interest rate

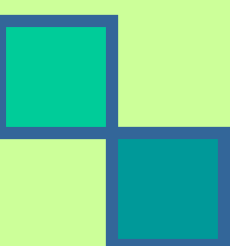

- Negative

# Black and Scholes Model

- $c$  : equilibrium Call option price today
- $p$  : Put option price today
- $S_0$  : Stock price today
- $X$  : Strike price
- $T$  : Life of option
- $\sigma^2$  : Standard deviation of continuously compounded annual rate of return on the stock
- $N(d)$  : Value of the cumulative normal density function
- $r$  : Risk-free rate for maturity  $T$  with continuous compounding
- $e$  : Base of natural logarithm



# Common Equity as an Example

- We know,  $S + B = V$
  - $S = \text{Max}(0, V - B)$
  - In case of a insolvent firm, the equity holders will get zero.
  - In case of a profitable firm, the equity holders will get  $(V - B)$ .
  - In other words, they will get all the remaining value of the firm after repaying the bond/debt holders.
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# Firms with Negative Networth

If, Assets = 1, Liabilities = 10

- We know,  $S + B = V$
- In this case, usually we normally visualize, the equity holders will get zero.
- But, assets are volatile (say, around 27% volatility)
  - $S = \text{Max}(0, V - B)$
  - In other words, they will get something if the firm turns around
  - Dividend Yield 3%, Interest Rate 10%, Maturity 5 years then value of share price ... ?
  - Please note that the maturity period is assumed to be the bond maturity period and the interest rate is taken as the risk-free interest of that period



# New Organization (YFA) → IPO

- To raise IPO, they had three options: (a) form a new company; (b) convert the proprietorship into a company; (c) purchase a dormant company
- The first two routes have lot of issues and takes a lot of time, paper work and other resources
- Purchase of a dormant company can be done through the majority shareholders (under SEBI regulations) ... the MOA and AOA of the company can be changed through passing a special resolution.
- The search resulted in two companies which fit into our definition of a dormant company: IQMS Software (BSE Listed) and Saarc Net (BSE Listed)

# Case of a New Organization


- Checked the above information first hand.
- If we consider the above option as a real option (specially, a long call option) giving us the advantage of entering a sector at least three years before we can do using other strategies then we can use ...
- A Black & Scholes Options Calculator.
- We find that the value of this option comes out to between Rs 3.40 crores to Rs 3.70 crores.
- In other words, if there is a right target company giving us a capacity to raise Rs 10 crores then the total acquisition price of the target company ...

# Evaluating a Takeover Deal

- Always recalculate using Net Present Value (NPV) or Discounted Cash Flow (DCF) Technique
- Also, look for any real options that exist
- Also, take a new expected rate of return (depending on the new risk profile of the new organization) and of course new cash flows (due to perceived synergies or otherwise)
- Take the deal costs also into account



# Managerial Real Options



Management flexibility to make future decisions that affect a project's expected cash flows, life, or future acceptance.


$$\text{Project Worth} = \text{NPV} + \text{Option(s) Value}$$

# Managerial Real Options

## Expand (or Contract)

- Allows the firm to expand (contract) production if conditions become favorable (unfavorable)
- Examples
- Expand – Many ... Kirloskars, almost everyone
- Contract – Zee Online

## Abandon

- Allows the project to be terminated early
- Examples
- Enron (Dabhol Power Corporation)

# Managerial Real Options

## Postpone (timing option)

- Allows the firm to delay undertaking a project (reduces uncertainty via new information)
- Example
- Private Power Producers (say, Cogentrix)

## Flexible Production Facilities

- Purchasing flexible production facilities
- Examples
- Reliance Petrochemicals

# Essential Take Homes ...

- Make a clear distinction between investment alternatives and options embedded (in these alternatives)
- Convince management that some proposals contain flexibility that cannot be valued by DCF technique
- In practice, real world cases have to be simplified in order to keep the order tractable.