

# Valuing Equity as an option - Eurotunnel in early 1998

79

- Eurotunnel has been a financial disaster since its opening
  - ▣ In 1997, Eurotunnel had earnings before interest and taxes of -£56 million and net income of -£685 million
  - ▣ At the end of 1997, its book value of equity was -£117 million
- It had £8,865 million in face value of debt outstanding
  - ▣ The weighted average duration of this debt was 10.93 years

Debt Type	Face Value	Duration
Short term	935	0.50
10 year	2435	6.7
20 year	3555	12.6
Longer	1940	18.2
Total	£8,865 mil	10.93 years

# The Basic DCF Valuation

80

- The value of the firm estimated using projected cashflows to the firm, discounted at the weighted average cost of capital was £2,312 million.
- This was based upon the following assumptions –
  - ▣ Revenues will grow 5% a year in perpetuity.
  - ▣ The COGS which is currently 85% of revenues will drop to 65% of revenues in yr 5 and stay at that level.
  - ▣ Capital spending and depreciation will grow 5% a year in perpetuity.
  - ▣ There are no working capital requirements.
  - ▣ The debt ratio, which is currently 95.35%, will drop to 70% after year 5. The cost of debt is 10% in high growth period and 8% after that.
  - ▣ The beta for the stock will be 1.10 for the next five years, and drop to 0.8 after the next 5 years.
  - ▣ The long term bond rate is 6%.

# Other Inputs

81

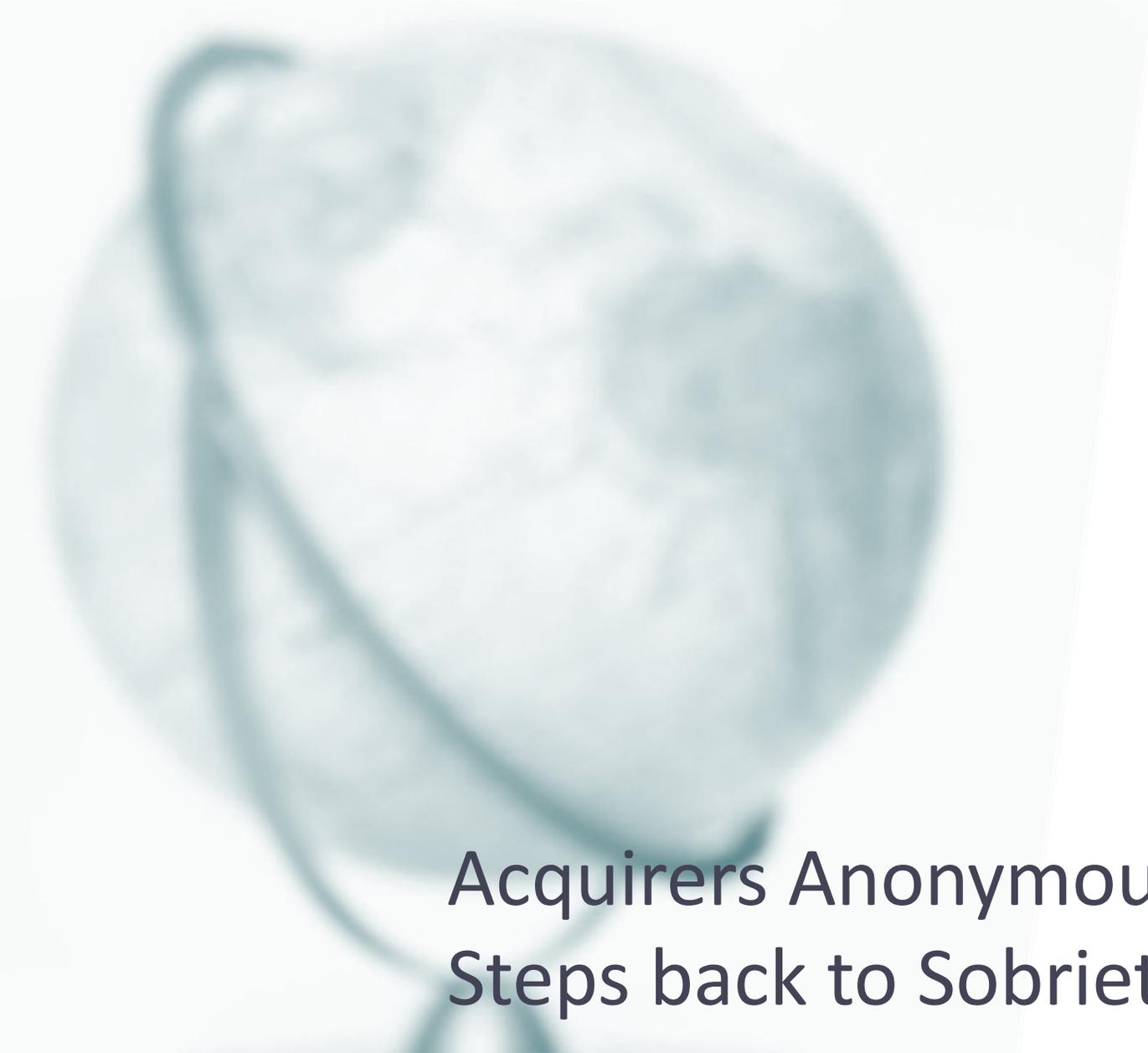
- The stock has been traded on the London Exchange, and the annualized std deviation based upon  $\ln$  (prices) is 41%.
- There are Eurotunnel bonds, that have been traded; the annualized std deviation in  $\ln$ (price) for the bonds is 17%.
  - The correlation between stock price and bond price changes has been 0.5. The proportion of debt in the capital structure during the period (1992-1996) was 85%.
  - Annualized variance in firm value  
 $= (0.15)^2 (0.41)^2 + (0.85)^2 (0.17)^2 + 2 (0.15) (0.85)(0.5)(0.41)(0.17) = 0.0335$
- The 15-year bond rate is 6%. (I used a bond with a duration of roughly 11 years to match the life of my option)



# In Closing...

83

- There are real options everywhere.
- Most of them have no significant economic value because there is no exclusivity associated with using them.
- When options have significant economic value, the inputs needed to value them in a binomial model can be used in more traditional approaches (decision trees) to yield equivalent value.
- The real value from real options lies in
  - ▣ Recognizing that building in flexibility and escape hatches into large decisions has value
  - ▣ Insights we get on understanding how and why companies behave the way they do in investment analysis and capital structure choices.



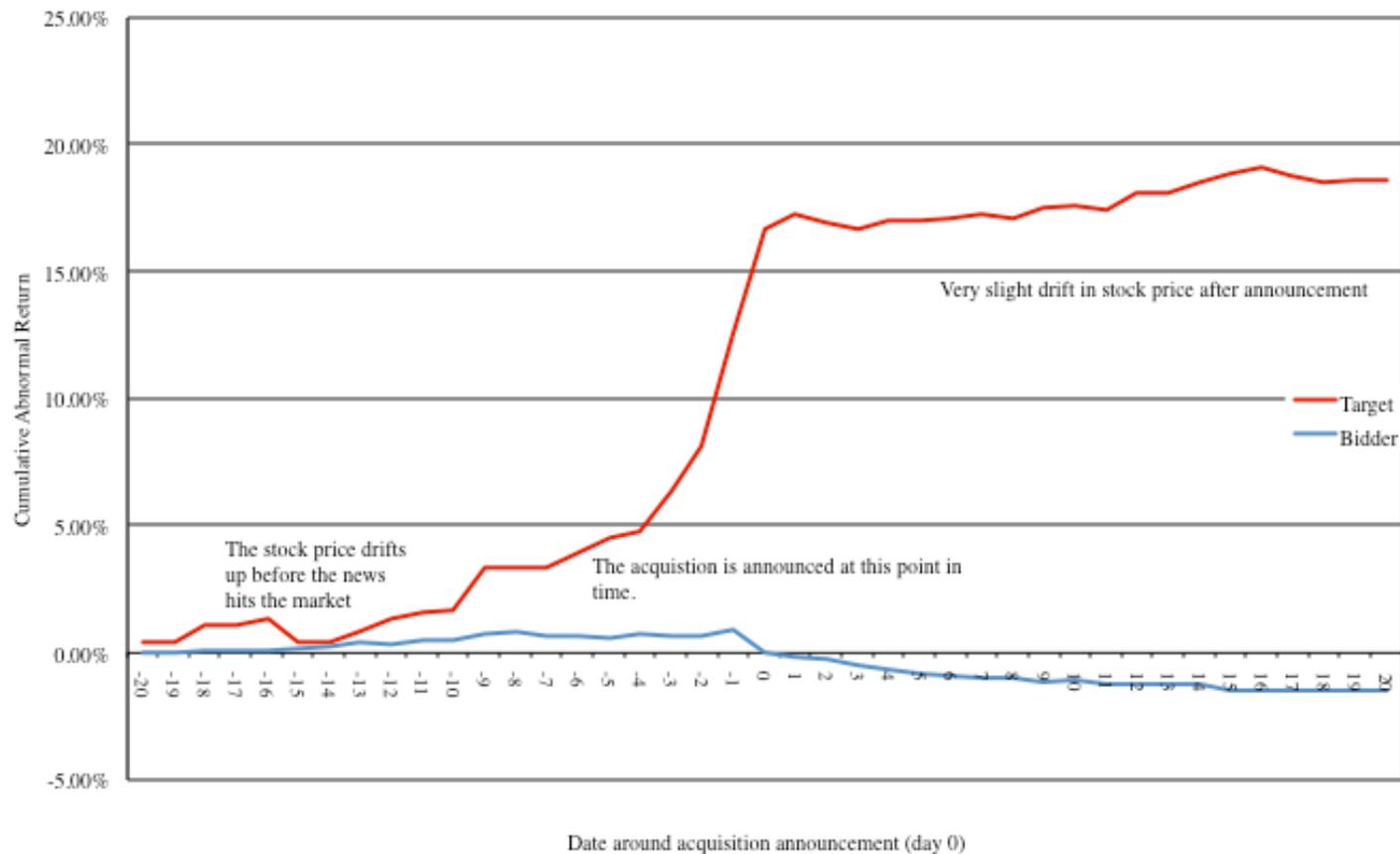
# Acquirers Anonymous: Seven Steps back to Sobriety...

Aswath Damodaran

# Acquisitions are great for target companies but not always for acquiring company stockholders...

85

*Cumulative Returns: Target and Bidder firms in Public Acquisitions*



# And the long-term follow up is not positive either..

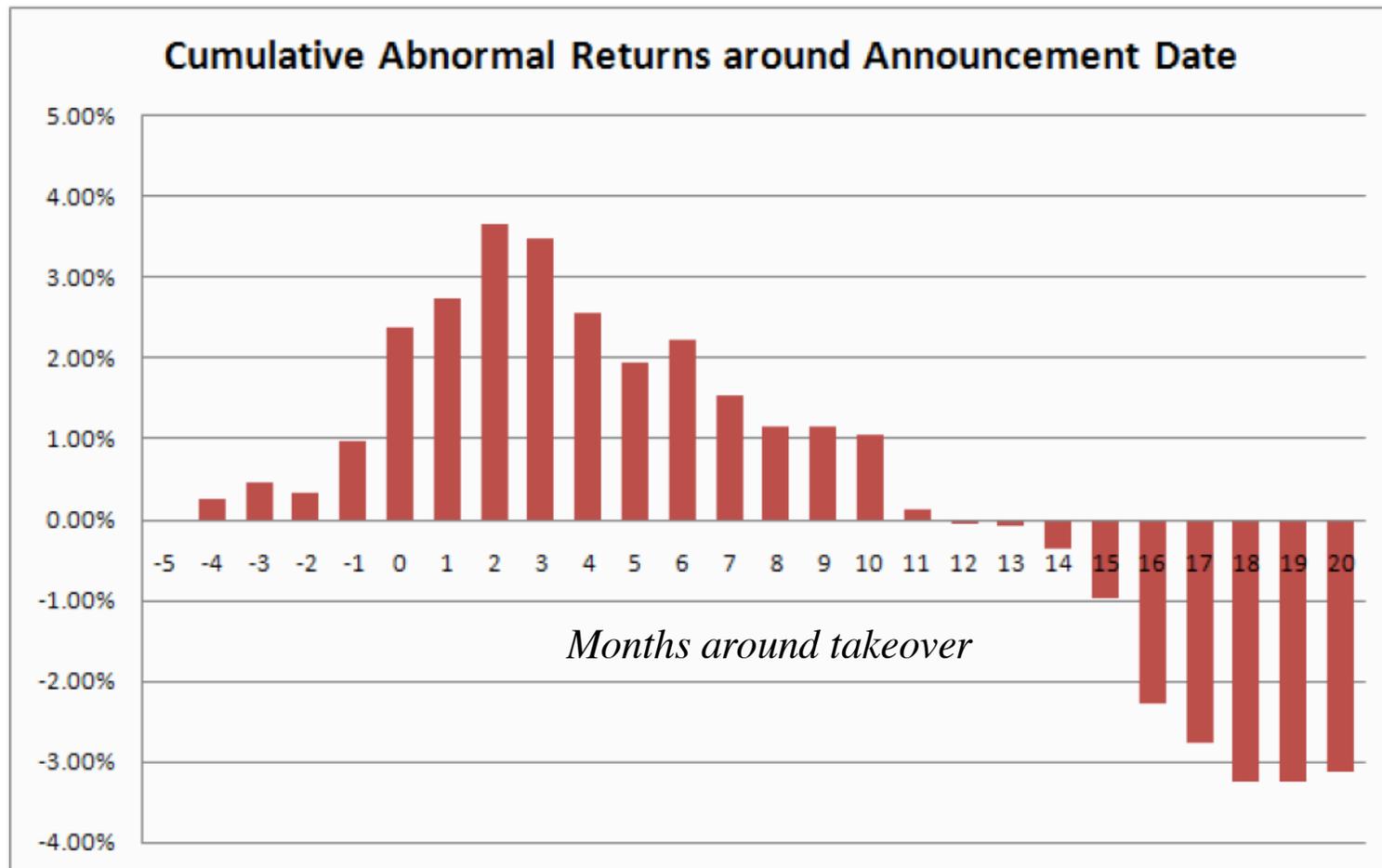
86

- Managers often argue that the market is unable to see the long term benefits of mergers that they can see at the time of the deal. If they are right, mergers should create long term benefits to acquiring firms.
- The evidence does not support this hypothesis:
  - McKinsey and Co. has examined acquisition programs at companies on
    - Did the return on capital invested in acquisitions exceed the cost of capital?
    - Did the acquisitions help the parent companies outperform the competition?
    - Half of all programs failed one test, and a quarter failed both.
  - Synergy is elusive. KPMG in a more recent study of global acquisitions concludes that most mergers (>80%) fail - the merged companies do worse than their peer group.
  - A large number of acquisitions that are reversed within fairly short time periods. About 20% of the acquisitions made between 1982 and 1986 were divested by 1988. In studies that have tracked acquisitions for longer time periods (ten years or more) the divestiture rate of acquisitions rises to almost 50%.

# A scary thought... The disease is spreading...

## Indian firms acquiring US targets – 1999 - 2005

87



# Growing through acquisitions seems to be a “loser’s game”

88

- Firms that grow through acquisitions have generally had far more trouble creating value than firms that grow through internal investments.
- In general, acquiring firms tend to
  - ▣ Pay too much for target firms
  - ▣ Over estimate the value of “synergy” and “control”
  - ▣ Have a difficult time delivering the promised benefits
- Worse still, there seems to be very little learning built into the process. The same mistakes are made over and over again, often by the same firms with the same advisors.
- Conclusion: There is something structurally wrong with the process for acquisitions which is feeding into the mistakes.

# The seven sins in acquisitions...

89

1. Risk Transference: Attributing acquiring company risk characteristics to the target firm.
2. Debt subsidies: Subsidizing target firm stockholders for the strengths of the acquiring firm.
3. Auto-pilot Control: The “20% control premium” and other myth...
4. Elusive Synergy: Misidentifying and mis-valuing synergy.
5. Its all relative: Transaction multiples, exit multiples...
6. Verdict first, trial afterwards: Price first, valuation to follow
7. It's not my fault: Holding no one responsible for delivering results.

# Testing sheet

90

Test	Passed/Failed	Rationalization
Risk transference		
Debt subsidies		
Control premium		
The value of synergy		
Comparables and Exit Multiples		
Bias		
A successful acquisition strategy		

# Lets start with a target firm

91

- The target firm has the following income statement:

Revenues	100
Operating Expenses	80
= Operating Income	20
Taxes	8
= After-tax OI	12

- Assume that this firm will generate this operating income forever (with no growth) and that the cost of equity for this firm is 20%. The firm has no debt outstanding. What is the value of this firm?

# Test 1: Risk Transference...

92

- Assume that as an acquiring firm, you are in a much safer business and have a cost of equity of 10%.  
What is the value of the target firm to you?

# Lesson 1: Don't transfer your risk characteristics to the target firm

93

- The cost of equity used for an investment should reflect the risk of the investment and not the risk characteristics of the investor who raised the funds.
- Risky businesses cannot become safe just because the buyer of these businesses is in a safe business.

## Test 2: Cheap debt?

94

- Assume as an acquirer that you have access to cheap debt (at 4%) and that you plan to fund half the acquisition with debt. How much would you be willing to pay for the target firm?

## Lesson 2: Render unto the target firm that which is the target firm's but not a penny more..

95

- As an acquiring firm, it is entirely possible that you can borrow much more than the target firm can on its own and at a much lower rate. If you build these characteristics into the valuation of the target firm, you are essentially transferring wealth from your firm's stockholder to the target firm's stockholders.
- When valuing a target firm, use a cost of capital that reflects the debt capacity and the cost of debt that would apply to the firm.

# Test 3: Control Premiums

96

- Assume that you are now told that it is conventional to pay a 20% premium for control in acquisitions (backed up by Mergerstat). How much would you be willing to pay for the target firm?
- Would your answer change if I told you that you can run the target firm better and that if you do, you will be able to generate a 30% pre-tax operating margin (rather than the 20% margin that is currently being earned).
- What if the target firm were perfectly run?