

Special Considerations for Small Companies

Edward Beale

CityGroup P.L.C.

www.city-group.com

020 7448 8950

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The output from BSM needs adjusting

- Inside the BSM black box
- Correcting for hedging costs
- Allowing for human behaviour



The BSM Black Box



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Transactions in the BSM portfolio

- Setting up the portfolio
- Maintaining the portfolio
- Liquidating the portfolio



Some BSM assumptions are not applicable in the real world

Assumptions:

- a) Liquid market in the underlying shares
- b) Small trading spreads
- c) Negligible transaction costs
- d) Opportunity to borrow shares and sell them short
- e) Share price movements are random
- f) Constant volatility, interest rate, expected returns and dividend yield

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BSM assumes negligible hedging costs

The BSM Portfolio assumes that the risk from holding options can be transferred to someone else at negligible cost.

Stock borrowing costs	7% to big
Transaction costs	0% to > 100%
Dealing spreads	0% to > 50%
Total	7% to >100%



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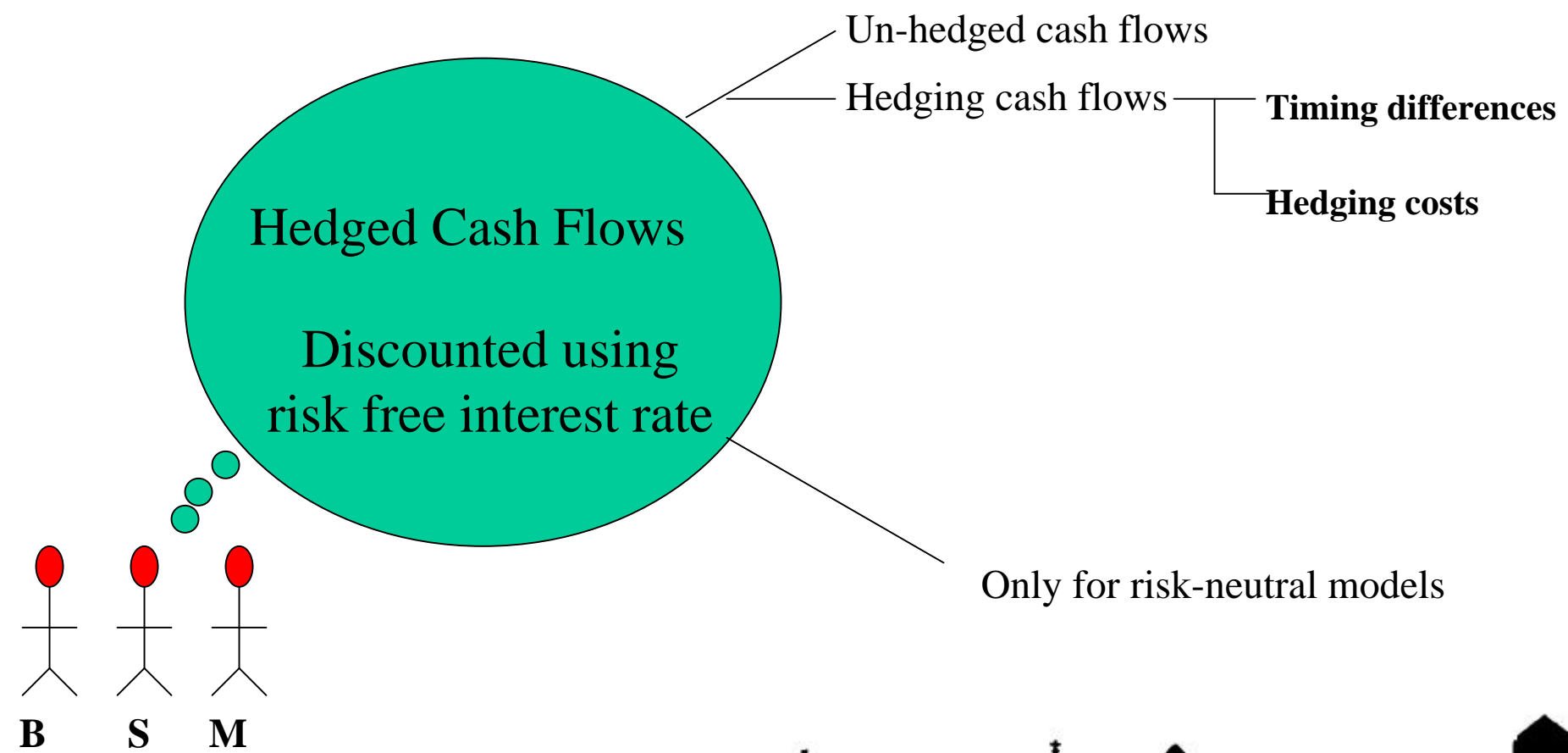
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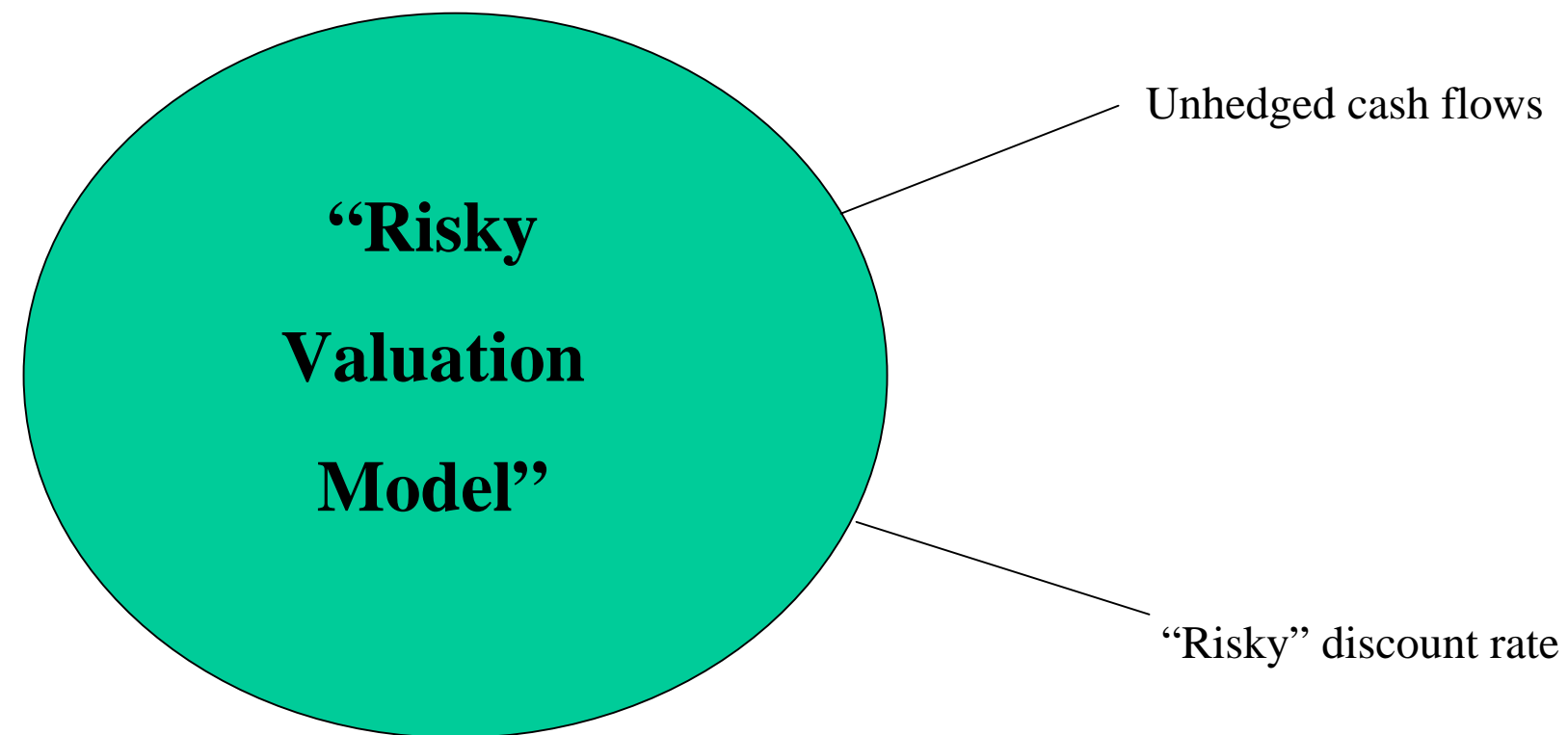
BSM incorrectly thinks that is a risk neutral model



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Option Values can also be calculated using a “Risky” valuation model



Human nature also needs to be taken into account

Technical Term: “sub-optimal exercise behaviour”

Meaning: individuals exercise options early to lock in any significant profit

Effect: reduces the option value by up to 15% of the BSM Value



Summary

Inside the BSM Black Box	No hedging costs
Correcting for Hedging Costs	7% + of option exercise value
Allowing for Human Behaviour	Up to 15% of BSM value

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**BSM ignores some fundamental factors
which need adjusting for.**

