THE PRACTICAL APPLICATION OF EQUITY DERIVATIVES FOR CORPORATES

The perfect Hedger and the Fox

13 August 2004

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Niels Bohr
and
Albert Einstein

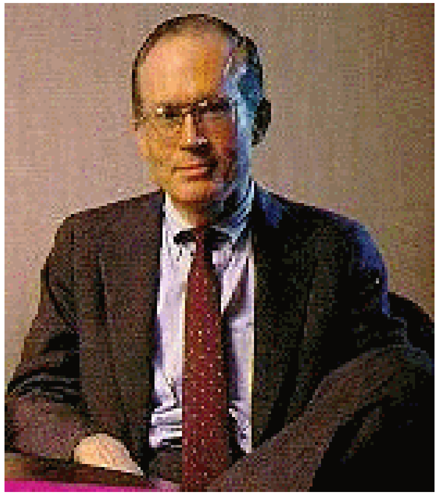
Before I came here I was confused about the subject.
Having listened to your lecture I am still confused.
But on a higher level.

Enrico Fermi (1901-1954)

What’s in the 1997 Nobel prize?

Myron Scholes (1941 -)

Along the way, it changed the way investors and others place a value on risk, giving rise to the field of risk management, the increased marketing of derivatives, and widespread changes in the valuation of corporate liabilities.



Fischer Black (1938 - 1995)

Robert Merton (1944 -)

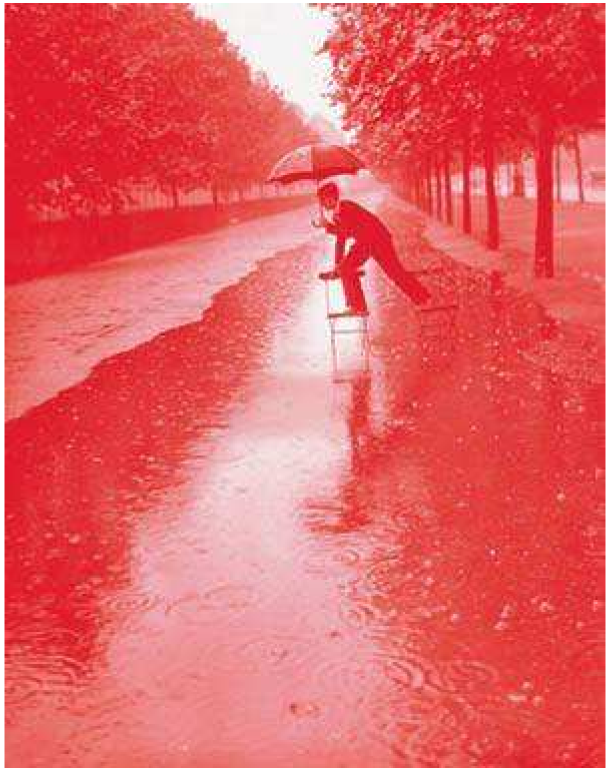
The theory "is absolutely crucial to the valuation of anything from a company to property rights“. In my view, **financial economics deals with four main phenomena**:

time, uncertainty, options and information.

William F. Sharp

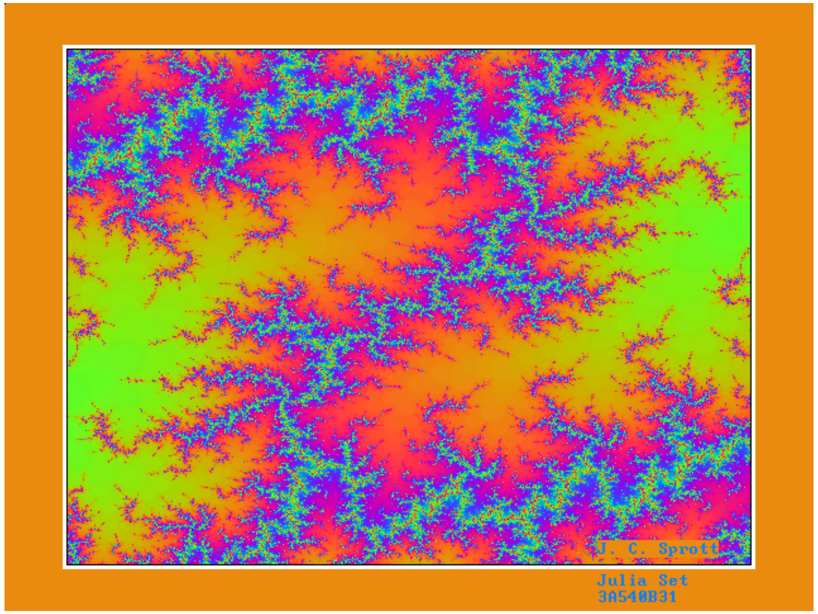
What's in it for corporates?

Derivatives expanded the universe of instruments available for trading and hedging



Corporates and equity warrants

Can corporates utilise equity derivatives effectively?



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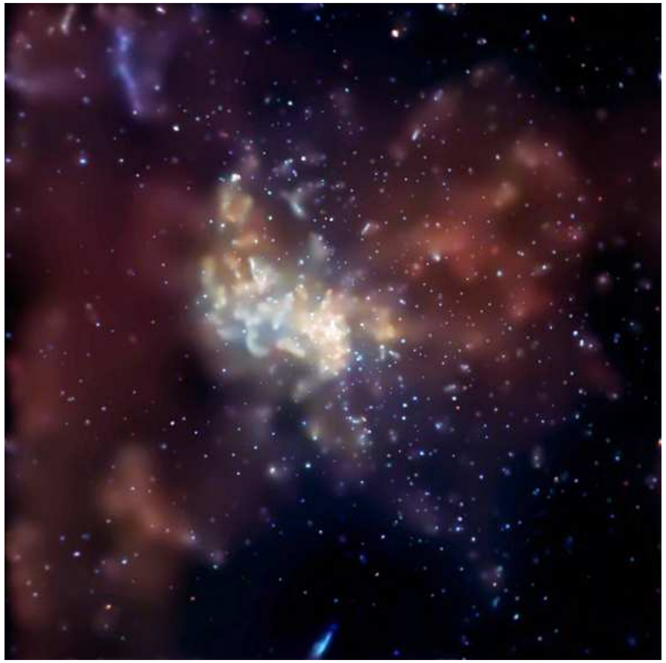

Saggitarius A

Corporates as hedgers use derivatives to reduce the market and operational risks they are exposed to

Black-Scholes through the eyes of.....

Transactions of JSCES, Paper No.20010048

Black-Scholes方程式の流体力学的解釈による拡張

The Expansion for Black-Scholes equation on Hydrodynamics Interpretation

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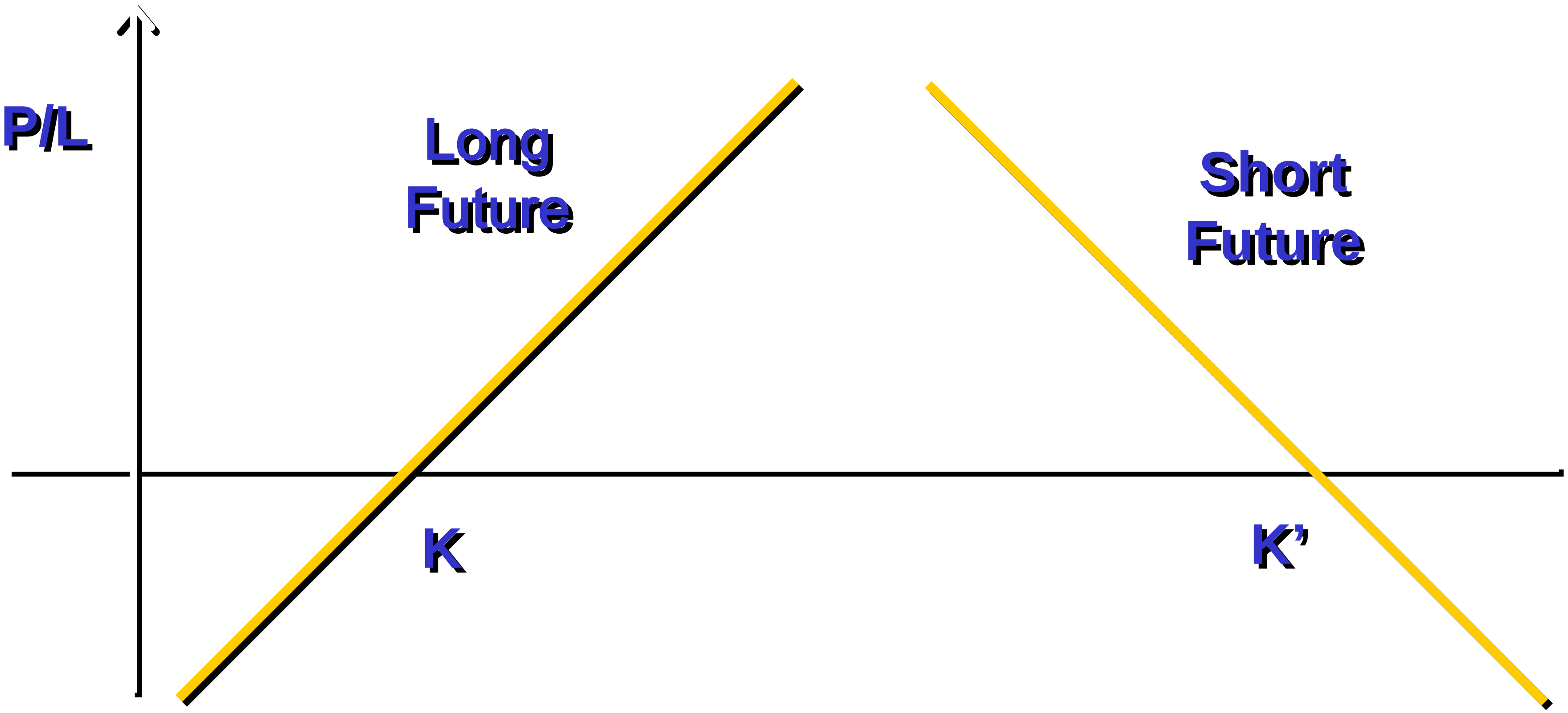
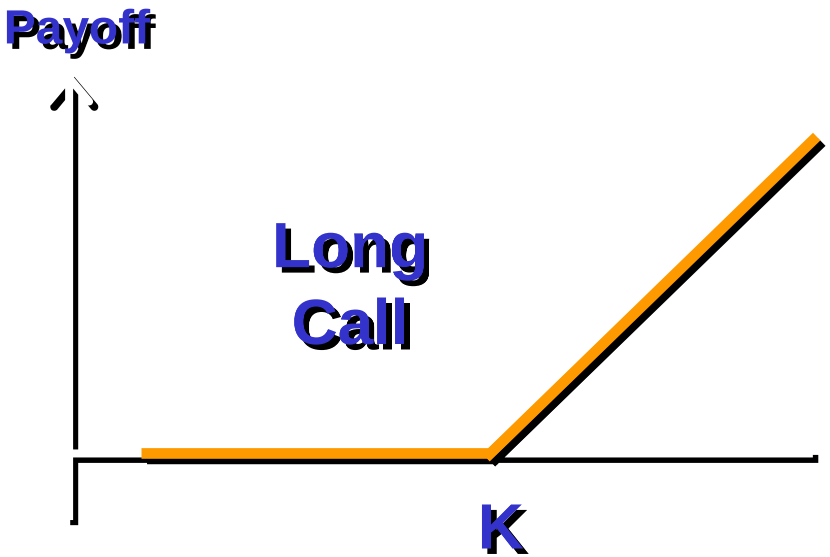
Let’s demistify options

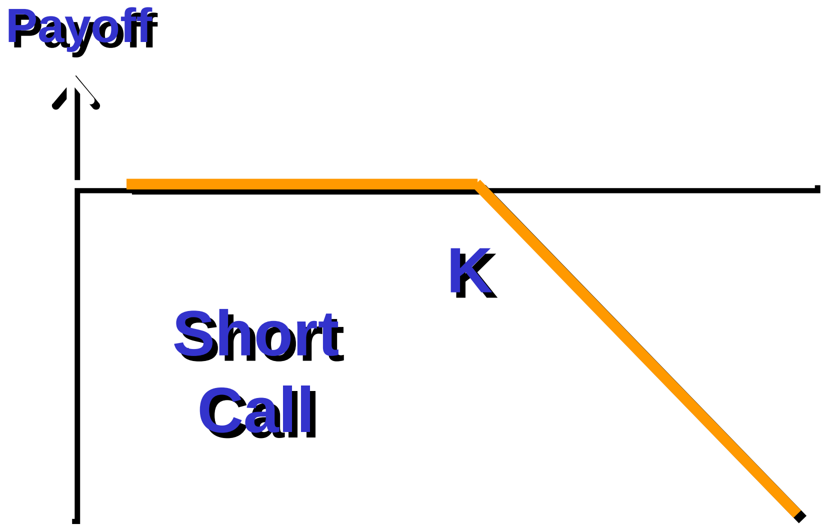
Derivatives as simple diagrams



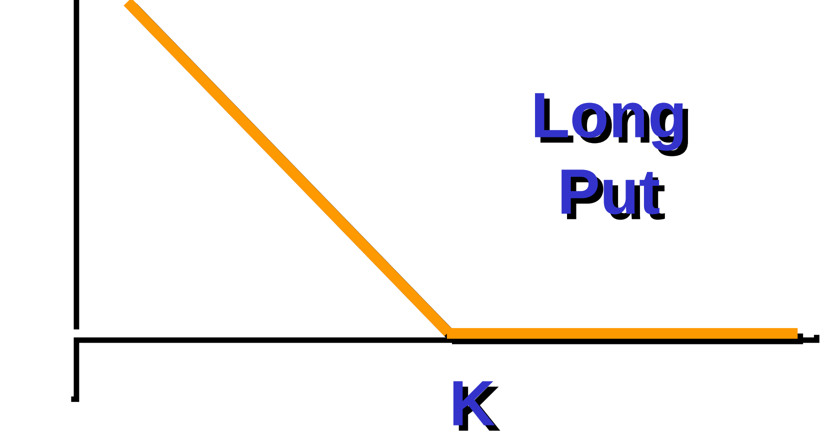
- a future has unlimited profit potential, but such a diagram also shows the potential losses

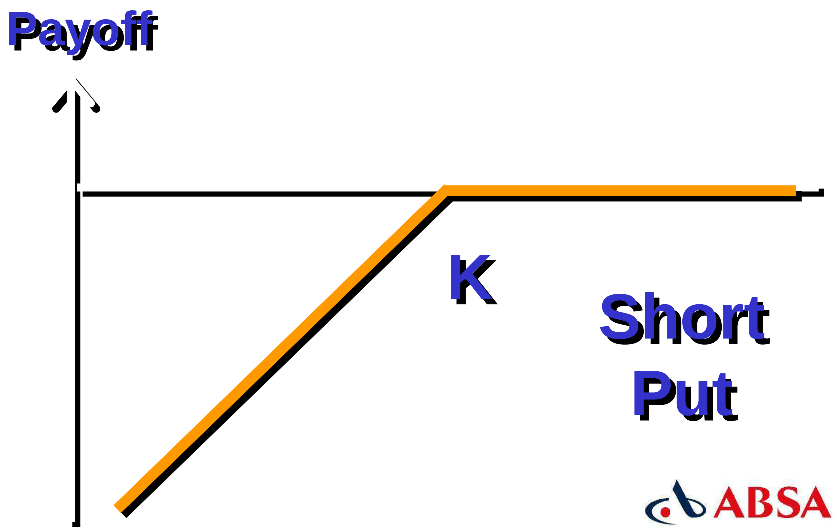
Options as simple diagrams





A payoff profile shows the payoff that would be received if the underlying is at its current level when the option expires





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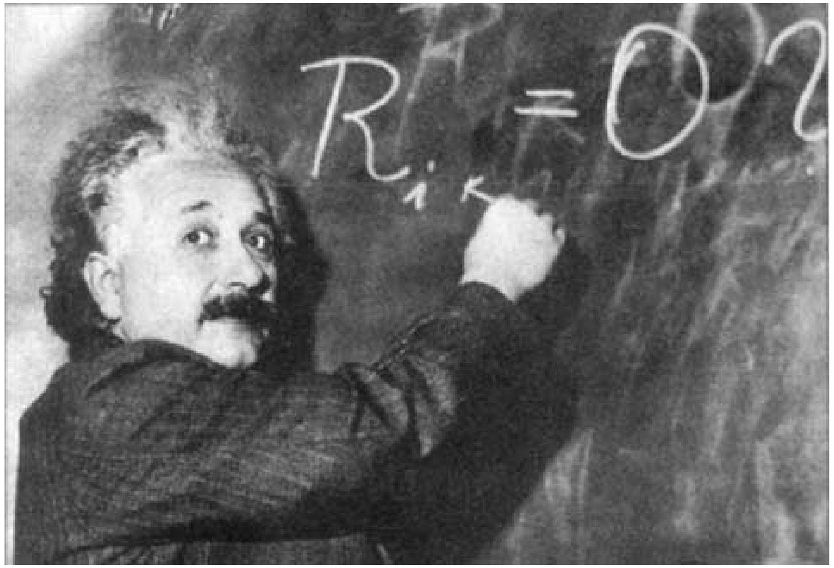
The put and/or call strategy

- **Bullish Strategy**
- **Buying just a call can be a strategy**

- **The investor will profit from an upward move in the underlying stock price while having very little capital at risk**

- **Bearish Strategy**
- **Buying a put is also a strategy**

- **In general investors buy a put as a hedge when they are long the underlying stock**



Albert Einstein

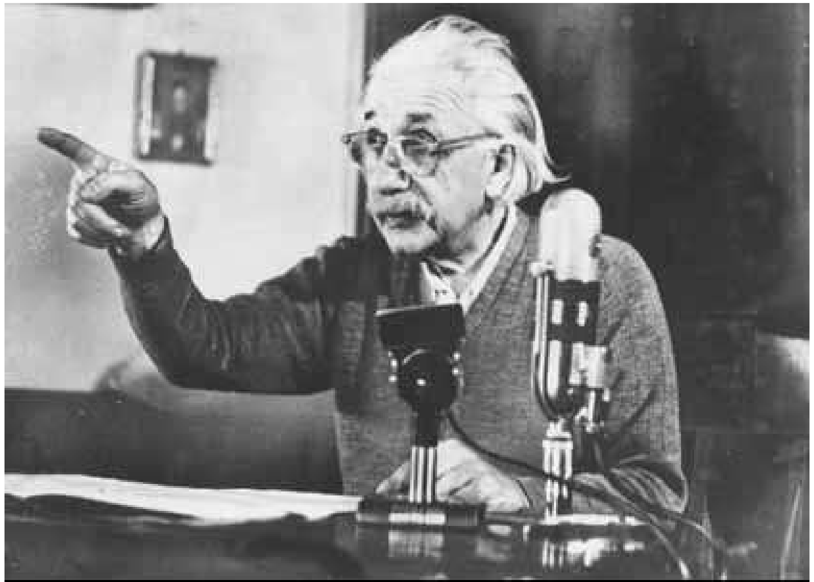
Share buybacks

- Board decides to buy shares back if share price goes below a certain level
- Company writes OTM puts
- Example: share price at 100, board decides to buy shares if share price dips below 90
- Company receives premium income

Myron Scholes on the floor of the CBOE

An Innovative Funding Strategy

- Venfin inherited 2% of Richemont's share capital when the Rembrandt Group split into Remgro and Venfin


Scan ©American Institute of Physics

- Venfin used these shares in an innovative manner to fund the purchase of HCI's Vodacom's stake

Source: SENS

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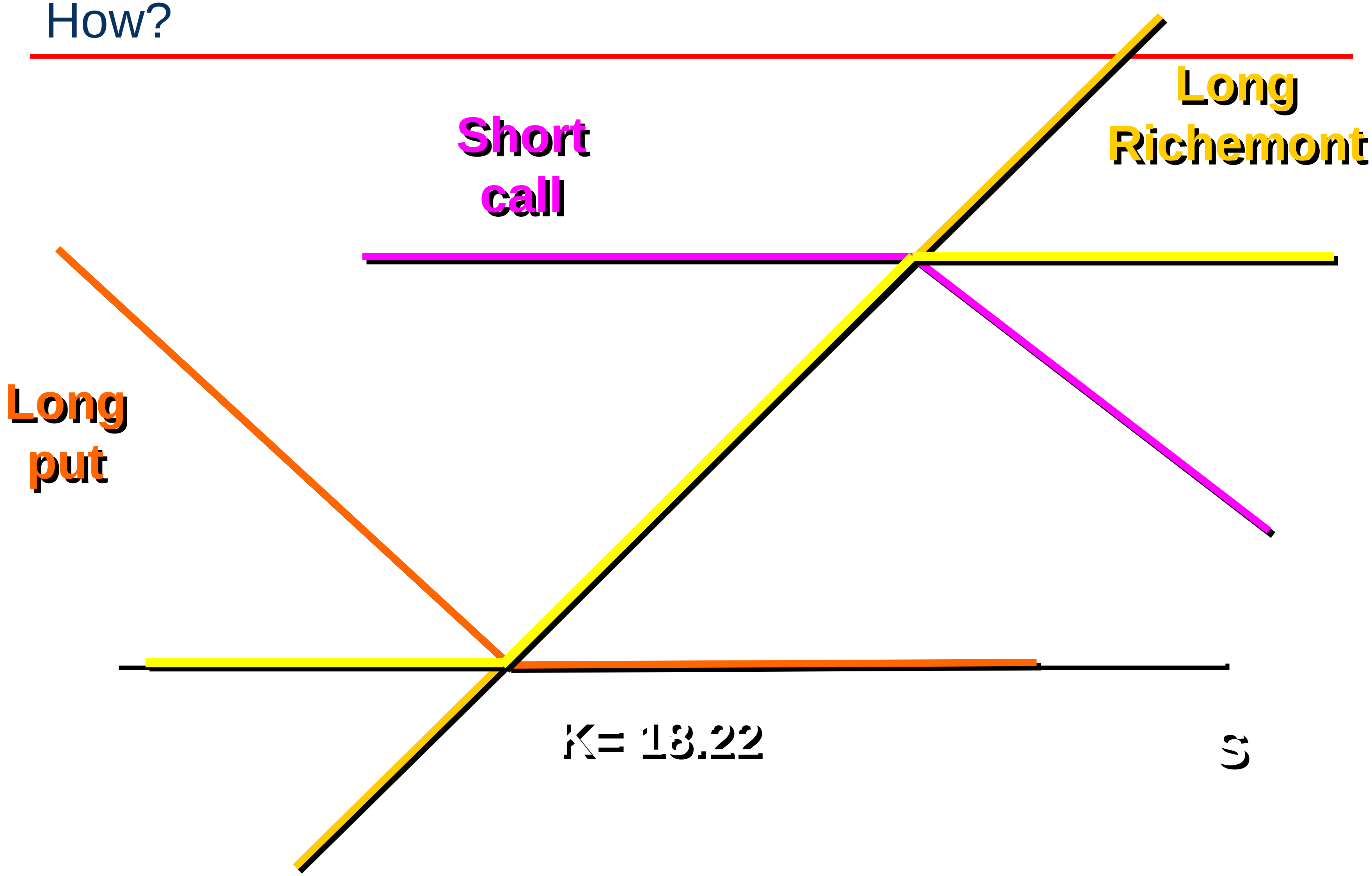
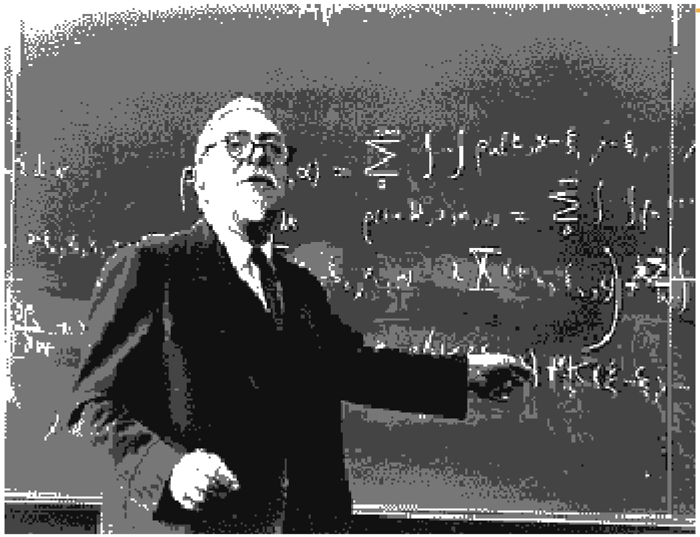
How?



Why?

- Simple solution could have been: sell shares at beginning of the negotiations, put money on deposit and buy stake on finalisation
- Why through such a structure as described above?
  - Uncertainty regarding the outcome of negotiations – if negotiations failed they did not have to exercise option
  - Richemont declared a dividend with LDT date in this period
  - Venfin kept all its share holder rights until the deal was finalised



Norbert Wiener

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Hedging using corporate warrants

- **Remgro and Richemont's owns a company called R&R Holdings which holds 31% in BAT**

- **R&R's stake in BAT was split into 26.5% ordinary shares and 5% preference shares with embedded put options at a strike of 675p**

- **The preference shares automatically converted into ordinary shares on a one to one basis on any sale to a third party**

- **R&R wanted certainty on the optionality**

The Manhatten Project: Niels Bohr, Robert Oppenheimer, Richard Feynman, Enrico Fermi

Source: SENS

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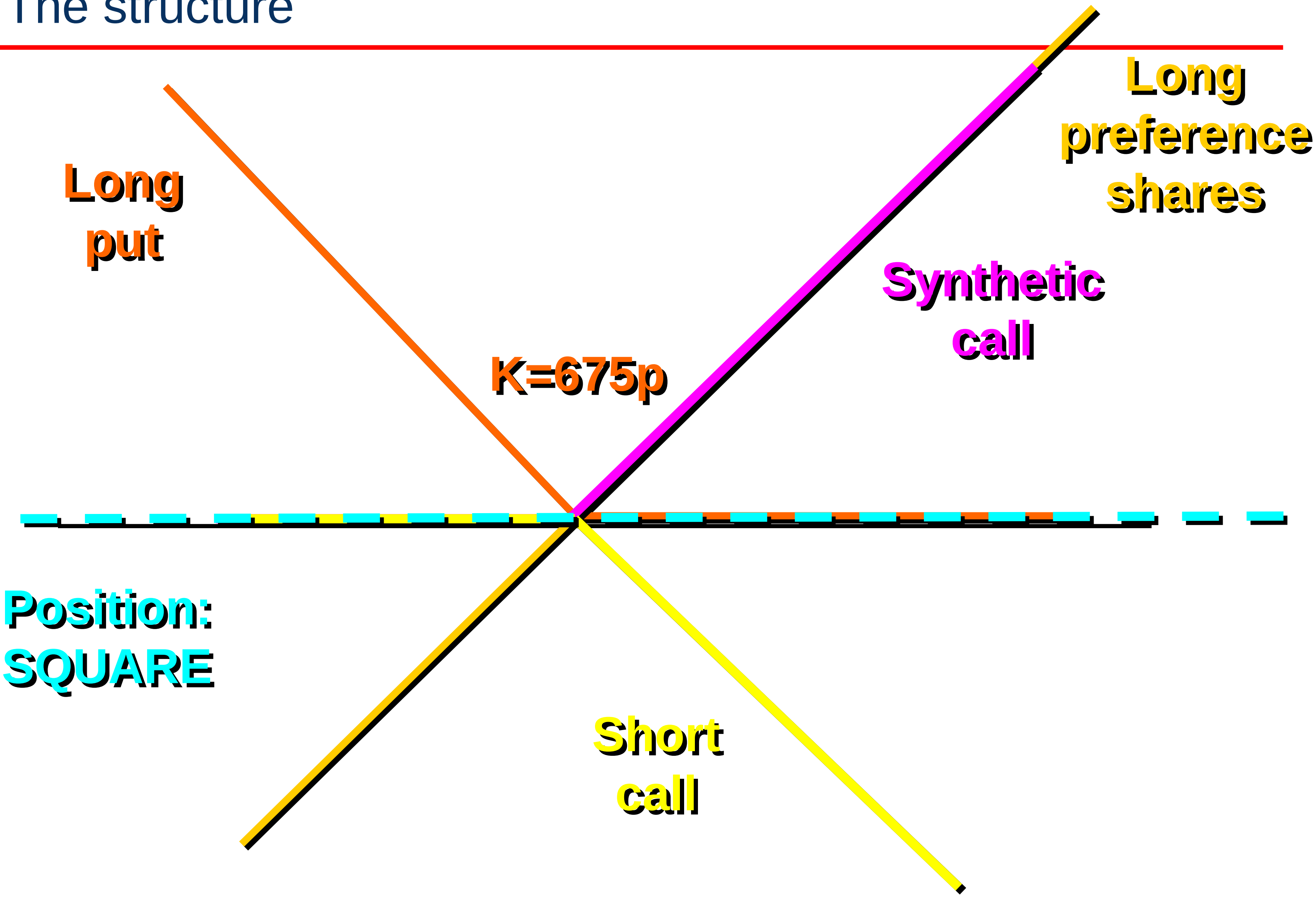
The structure



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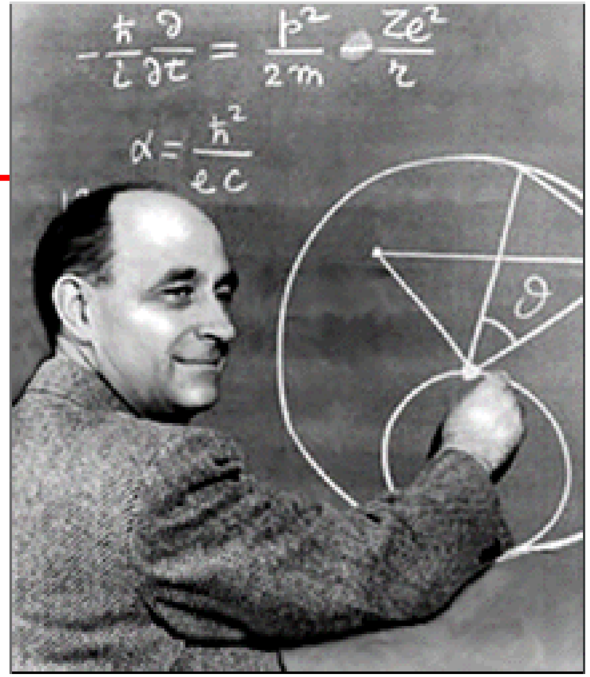
Lock in returns

- **In June 2004, R&R Holdings received GBP 816 million, either upon exercise of the warrants by the warrant holders or through the redemption of the preference shares by BAT**



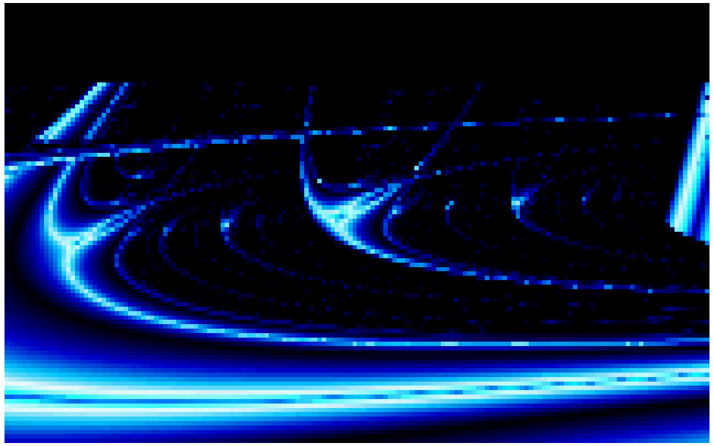
Enrico Fermi

- **By issuing warrants R&R was guaranteed of GBP 816 million**

- **R&R sold the time value and option rights embedded in the synthetic call, unlocking value early**

Corporate warrants, the LTCM and UBS way

Report: International Herald Tribune, Saturday, September 26, 1998



Losses due to the failure of Long Term Capital Management (LTCM):

Credit Suisse, Europe's sixth-biggest bank - $55 million

Dresdner Bank - $142.6 million

Union Bank of Switzerland (UBS – the world's second largest bank) - $682 million

A convenient deal

UBS wanted a structure that looked more like an option than a loan, turning any income into a capital gain, and they wanted an opportunity to invest directly in LTCM.

- **LTCM was on the crest of the wave**
- **LTCM and UBS had complementary goals:**

  UBS wanted to buy a significant stake in the fund, and LTCM partners wanted to convert foreign interest income from their off-shore hedge fund into capital gains and defer it
- **Income from LTCM flows directly to the partners in the form of short-term profits or interest and**
- **dividends, which are taxed at 39.6 percent. Long-term capital gains, by contrast, are taxed at 20 percent.**

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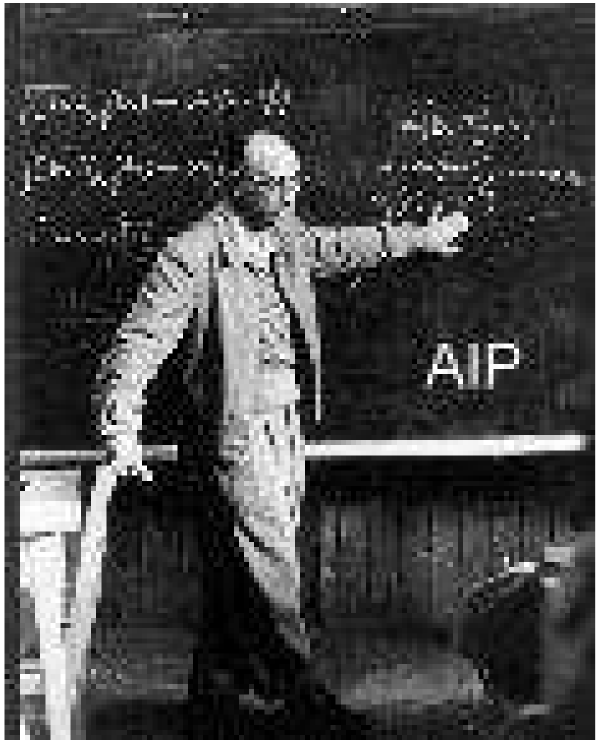
UBS: the deal

- **For a premium of $300 million UBS sold to LTCM a seven-year European call option on 1 million of LTCM's own shares, valued then at $800 million.**
- **To hedge the position UBS bought $800 million worth of LTCM shares.**
- **UBS booked an estimated $30 to $50 million profit up front**



Enrico Fermi

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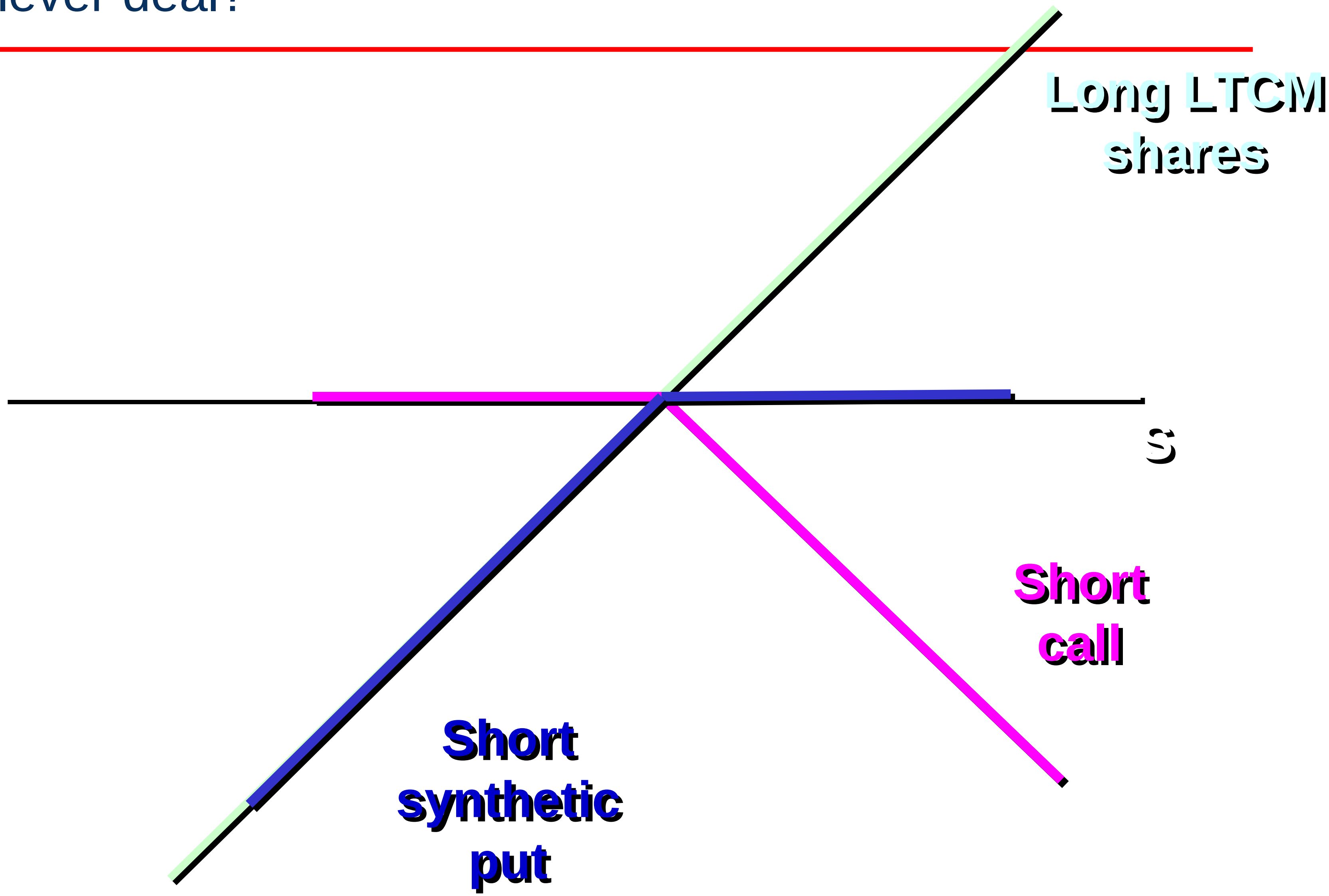
A clever deal?



UBS's risk management

- Hedge fund shares are not liquid
- When Russia defaulted on loans in 1998, liquidity dried up
- UBS could not delta hedge its short synthetic put by selling LTCM shares
- LTCM's share price collapsed and UBS lost $682 million

- UBS's risk managers never considered the possibility of a collapse of LTCM

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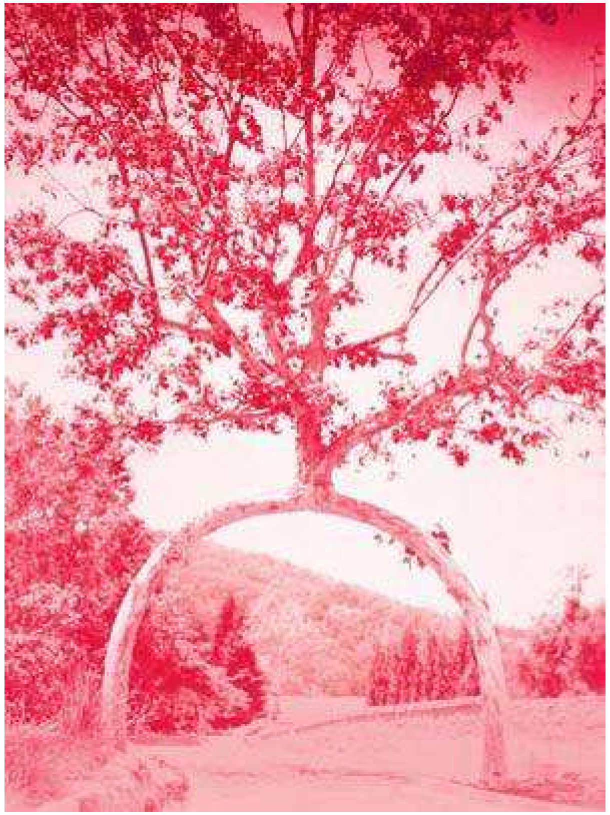
Hedgers and foxes

- **Equity derivatives can be used effectively by corporates to hedge certain contractual liabilities**

- **Understand the risks involved**



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