Impact of Volatility on Pricing

How volatility affects option pricing

Option prices are influenced by prevailing interest rates and dividend yields (which are often foregone when holding options). However, the dominant factor is the volatility of the underlying asset.

Volatility measures the magnitude and frequency of price movements in a stock or index over a given amount of time. For example:

- A well-diversified index that trends steadily upwards will have low volatility, making call options (which benefit from upward movement) relatively inexpensive.
- Similarly, a put option (which protects against falling prices) will also be cheaper if the underlying index is stable.
- Conversely, higher volatility implies greater uncertainty, which increases the cost of both calls and puts, as the potential price swings pose more risk for the option writer (seller).

How This Relates to Autocalls

Autocallable structured products often involve a combination of selling put options and buying call options. The capital is at risk if the underlying breaches a barrier (e.g. 50%), and the premium received from selling puts is used to fund upside participation via call options.

- When volatility is high, put options are more expensive - generating more capital that can be used to enhance the return potential. However, the likelihood of breaching the downside barrier also increases, making the outcome less certain.
- When volatility is low, the put premium is lower, reducing the capital available to purchase call options. This leads to lower potential returns but greater certainty of receiving them.

In essence, there is a trade-off between return potential and certainty of outcome, closely tied to market volatility conditions at the time of structuring.