OPTIONS

Options consist of rights to buy or rights to sell, which can be exercised or foregone at the discretion of the holder. The right to sell is called a *put option* and the right to buy is called a *call option.* In either case, the party who acquires the right is the *holder* of the option, whereas the party who has the liability, and who is paid a price or a *premium*, is the *writer* of the option.

In either case, there are short and long positions. The party owning the right to buy in a call option of the right to sell in a put option is on the *long* side of the contract. The party with the liability is on the *short* side of the contact.

	Call	Put
Short	*liability to sell*	*liability to buy*
Long	*right to buy*	*right to sell*

The price agreed in the contract is called the *exercise price* or the *strike price.* The date written into the contract is called the *expiry date* or the *maturity date. European options* can be exercised only on the date of expiry, whereas *American options* can be exercised at that date or any time before.

The party that holds the option must pay for the privilege at the time that the contract is written. The payment or premium may be denoted by p and the value of that sum at time τ, had it been invested in a riskless bond, may be denoted by P. A call open gives the right to purchase an asset at time τ at the contracted price of K_τ. The actual price of the asset on the open market at that time may be denoted by S_τ. The call option will be exercised only if

$$S_\tau > K_\tau$$

which is to say that what is called for is currently worth more than what will be paid for it. To assess the profit or the loss associated with an option, one must take account of the cost of acquiring it. The call option will have prove profitable to the party exercising it only if

$$S_\tau > K_\tau + P,$$

which is when the value of what is called for exceeds what is currently paid for it plus the cost, up to the present time, of holding the option.

The put option will be exercised only if

$$S_\tau < K_\tau$$

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which is to say that the asset possessed by the option holder is worth less on the open market that can be claimed for it under the terms of the contract.

The purpose of taking a long position in a call option is to profit from a rise in prices. If the holder of the option is committed to buying a commensurable quantity of the underlying asset at the expiry time, then the call option will serve to reduce the losses that would be occasioned by a rise in prices and owning it will constitute a hedging strategy. In the absence of such a commitment, it might serve as a pure speculation.

A long position in a put option will allow the holder to profit from a fall in prices. It may serve to reduce his losses, if he is an owner of the underlying asset, or it might serve as a speculation.