Andreas Krause

Investment strategies with options

- Options can be used to hedge positions, but they can also be used to as building blocks to generate payoff profiles at maturity of the option(s) that suit the needs of the investor.
- We will look at some of the most common such option strategies.

Combining options

Combining options

→ An investment strategy is to combine different options, usually with the same time to maturity to generate profits if a certain scenario has been obtained and limit the losses if it does not materialise.

- The aim is to combine these different options such that at maturity they generate a specific payoff profile.
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  - We may combine put and call options to achieve these payoff profiles,
  - but also long and short positions in options, where short position is to sell an option.
  - We might also use options with the same or with different strike prices.
- These payoff profiles are developed to suit the needs of the investor and their investment strategy.

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- We can combine options and generate different payoff profiles at maturity of the option

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- We combine put and call options

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- We combine put and call options, long and short options

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Synthetic asset

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→ Let us first consider an investment strategy in which options are used to re-create the underlying asset.
- We look at the profits the trading strategy generates at maturity of the options for different values of the underlying asset.
- We choose a strike price as the benchmark for our profits and losses.
- The strategy consists of selling a put option with this strike price
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→ We can thus use options to recreate the payoff profile of the underlying asset.

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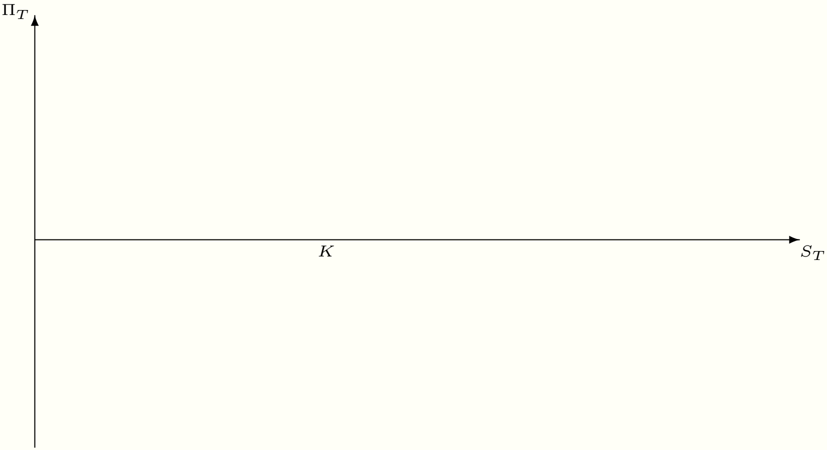

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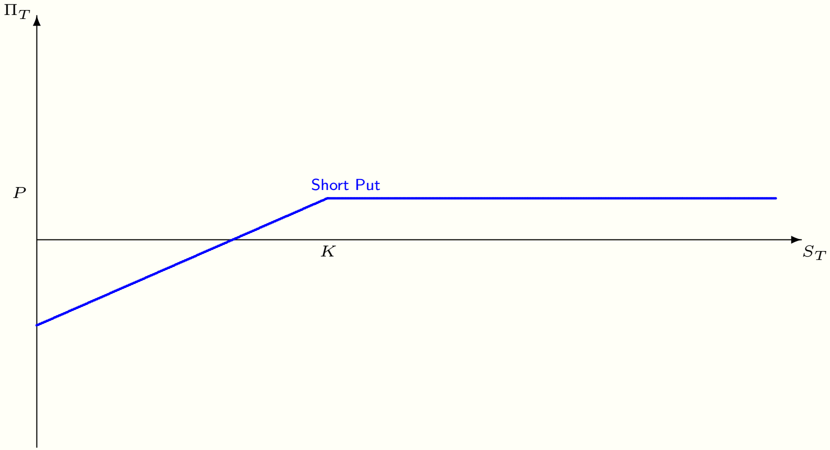

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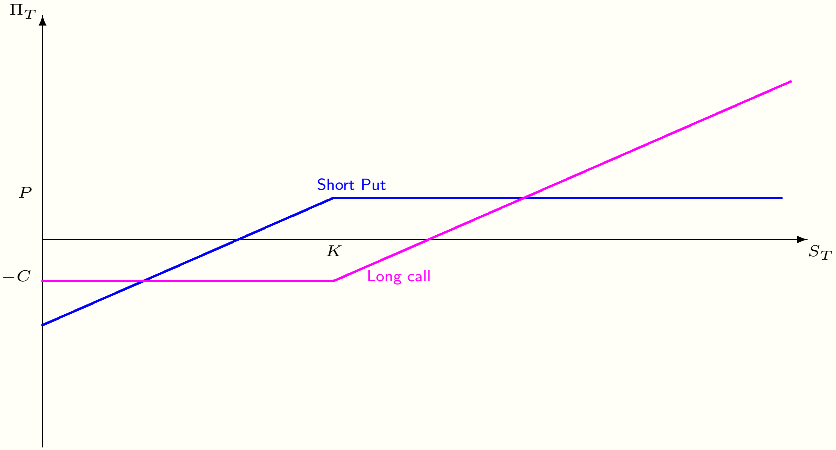

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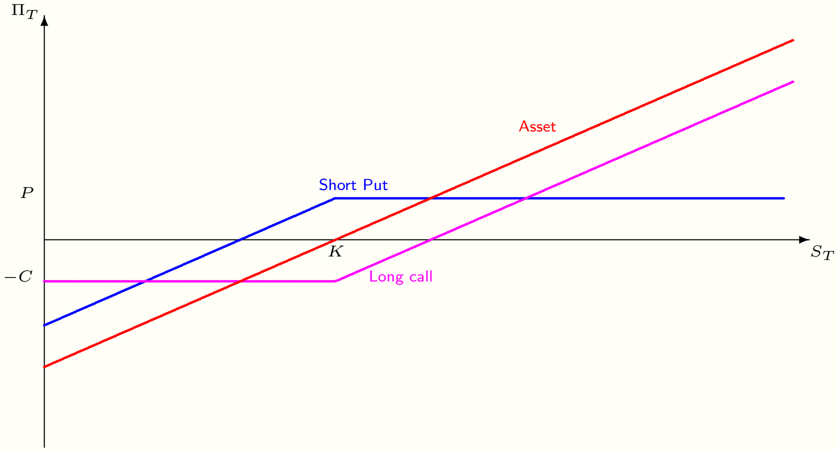

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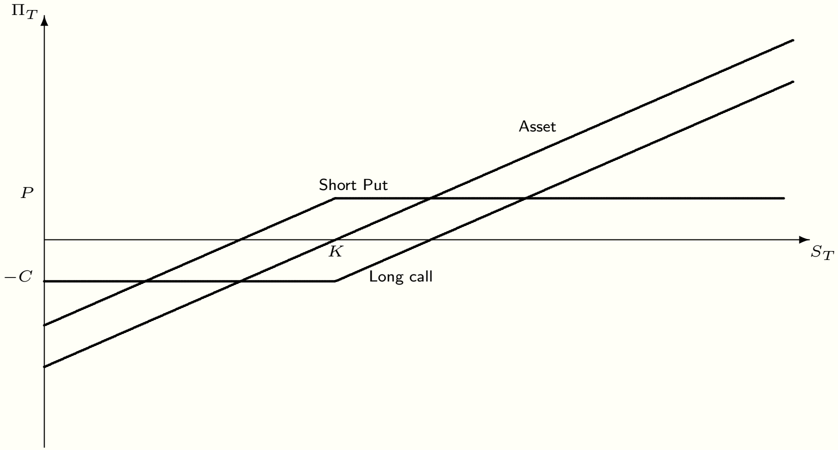

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Reason to re-create the underlying asset

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- - The reason an investor might use options to recreate the underlying asset is that the investor is unable to invest directly into the asset.
  - If he wants to make such an investment as part of his portfolio strategy, he can obtain the risk exposure of this asset using options.
- - An investor might not be able to invest into an asset direct due to regulatory constraints imposed.
  - There might be capital controls that prevent the investment into a country overall, prevent the withdrawal of investments, or limit investments. Using options might be a way around such regulations.
  - Many countries also have restrictions on investment into companies of national importance, be that in defense, infrastructure, or media.
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- The underlying asset might not be available to an investors

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- The underlying asset might not be available to an investors, using options he can construct the same exposure

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- Assets might not be available due to regulatory constraints

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- Assets might not be available due to regulatory constraints, such as capital controls

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- Investors might not want to obtain the asset directly

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Bull spread

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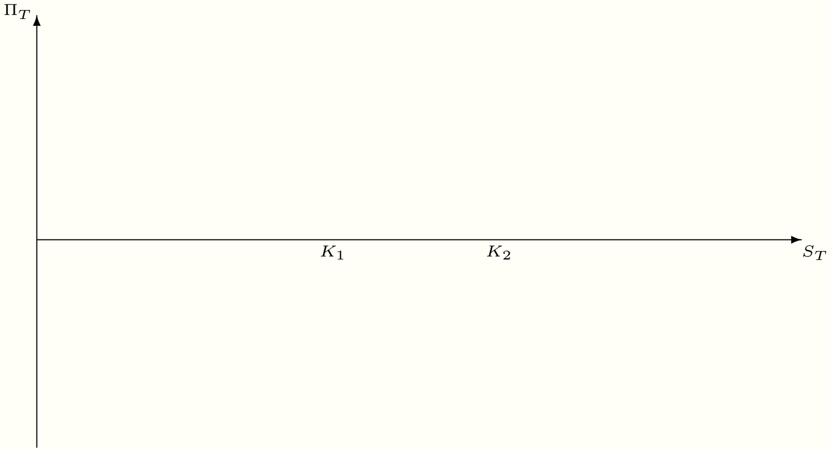

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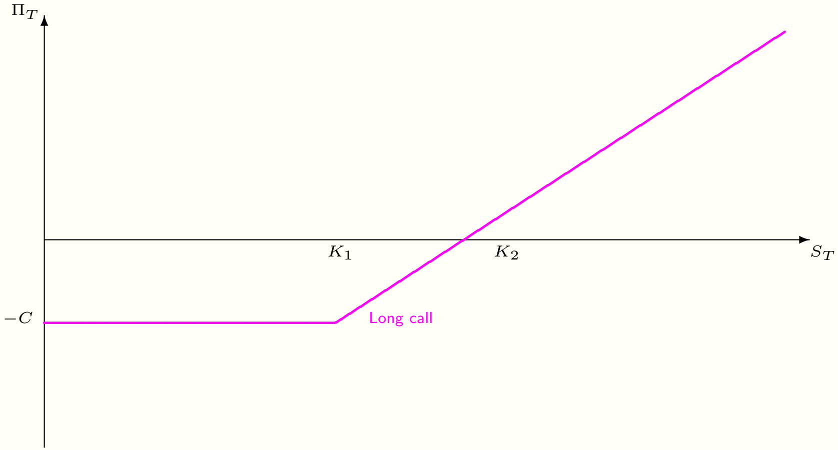

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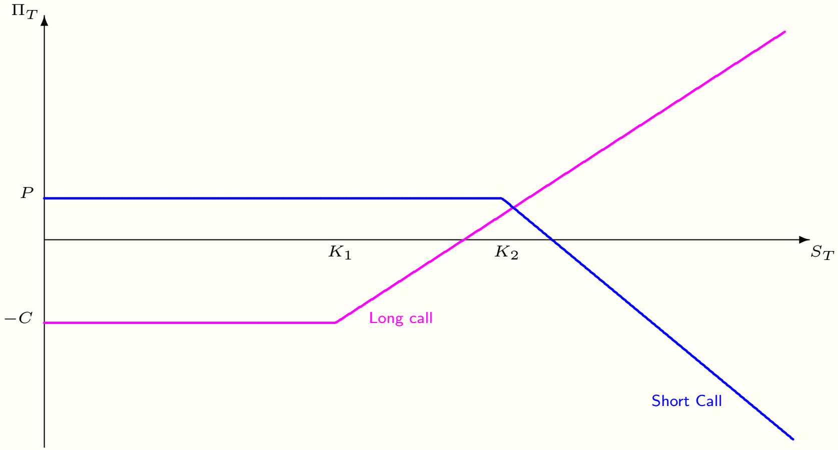

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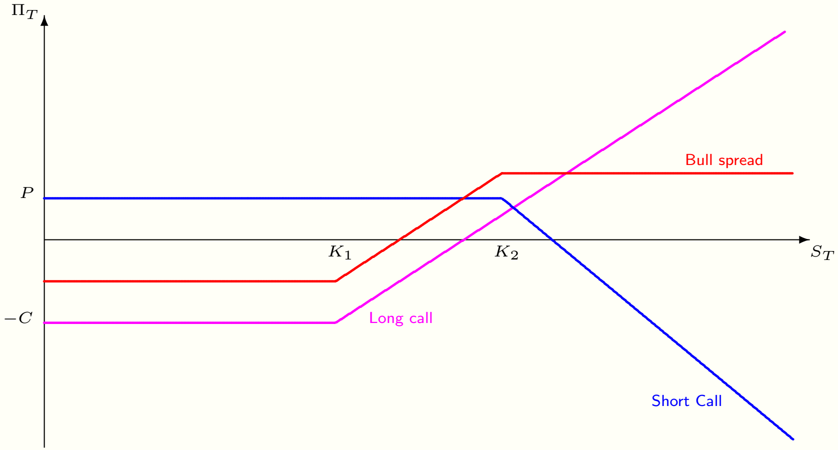

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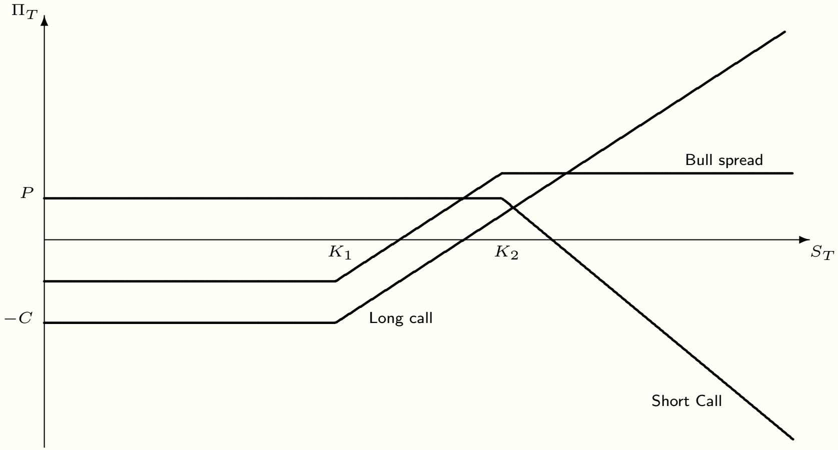

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- - To use this strategy investor might believe the asset to increase in value and seek to obtain a profit in this case.
  - They also acknowledge that there is a reasonable chance of assets falling in value and seek to protect them from this scenario.
- Selling a call generates additional revenue.
- - Selling the other call limits the losses from buying the call due to the additional revenue this brings.
  - The effect it that this strategy will also limit possible gains.

→ Such a strategy might be sought if the investor believes the asset value to increase, but does not expect a larger increase and hence even if his profits are not limited would not gain much more profits, while at the same time seeing the risk of the asset price falling as having a non-significant probability.

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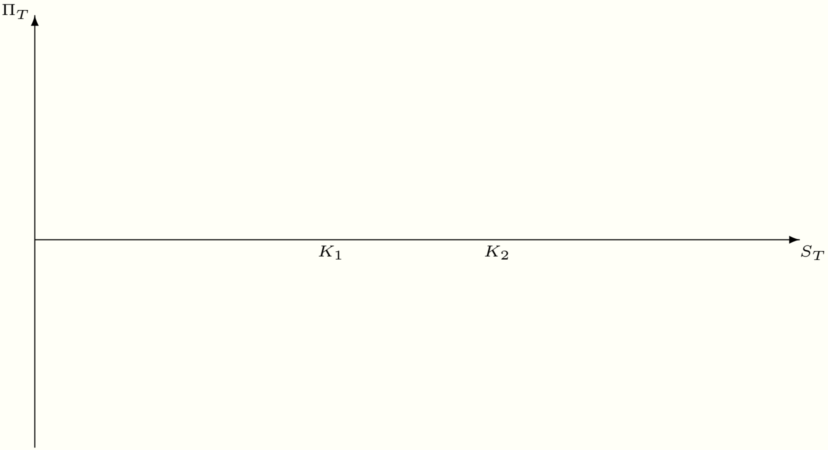

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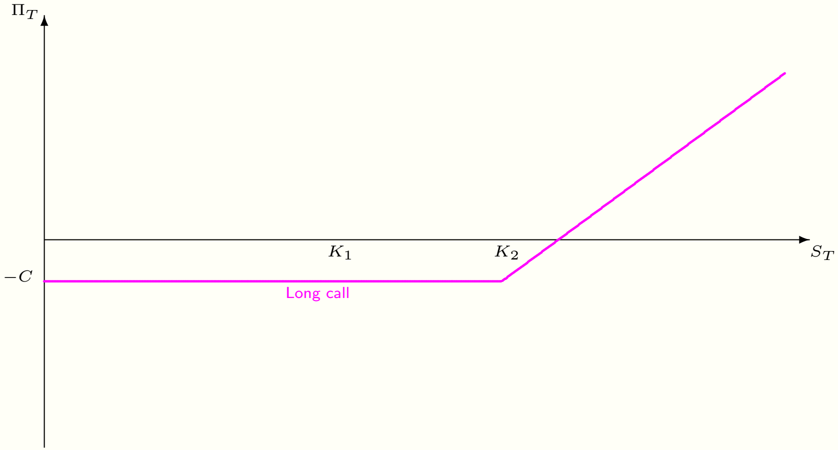

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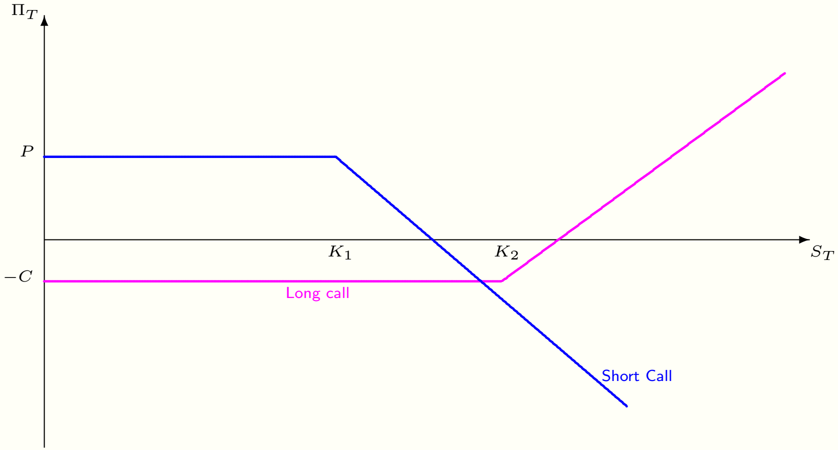

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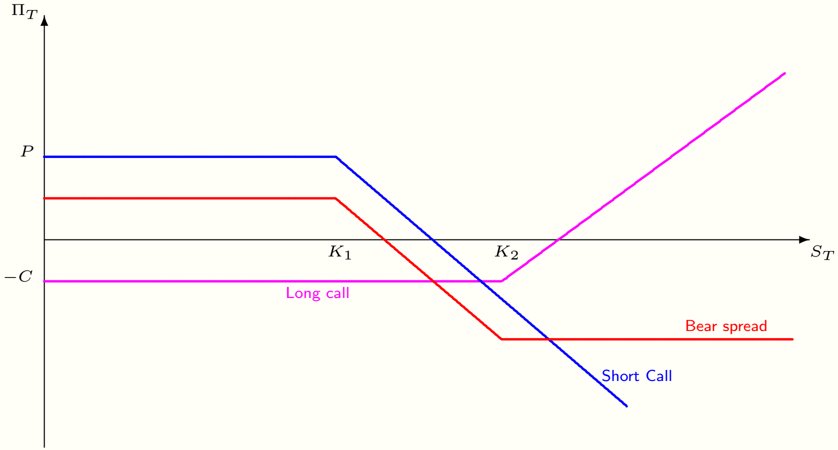

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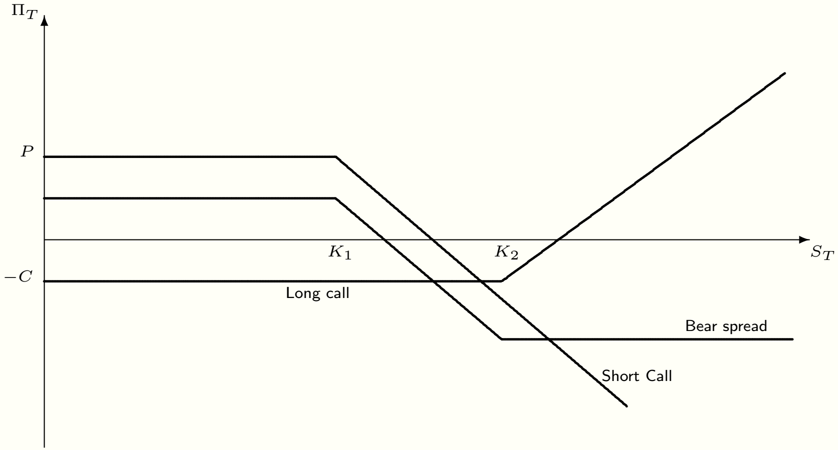

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  - only the areas of profits and losses are reversed; now the investor obtains profits if the asset value falls.
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- Both options use the same strike price.
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- and buys a put option at the same strike price.
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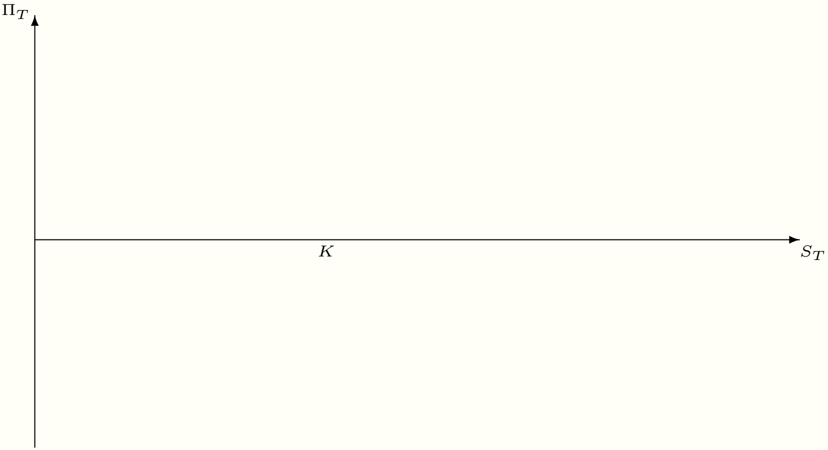

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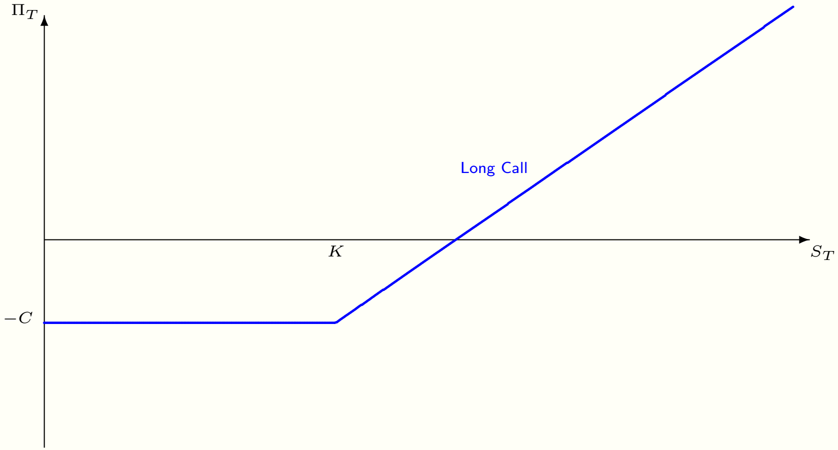

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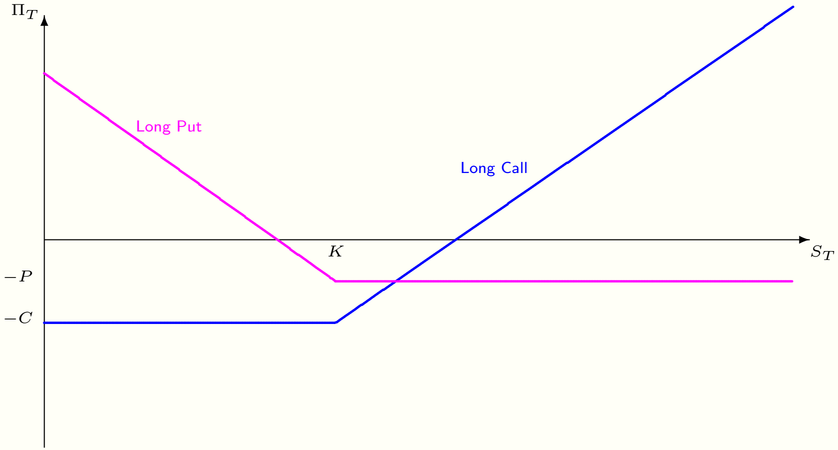

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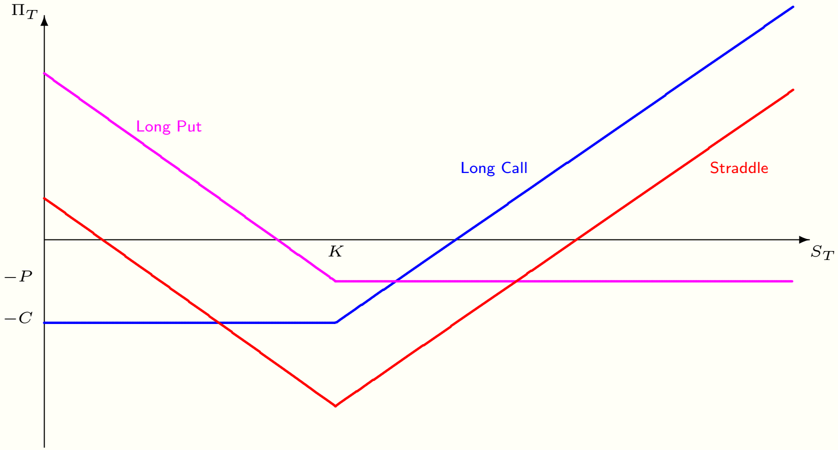

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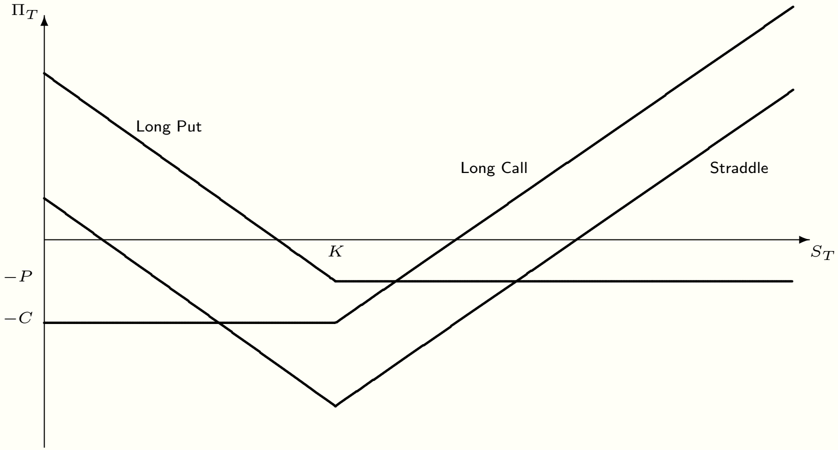

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- We look at the profits the trading strategy generates at maturity of the options for different values of the underlying asset.
- Both options use the same strike price.
- The investor sells a call option
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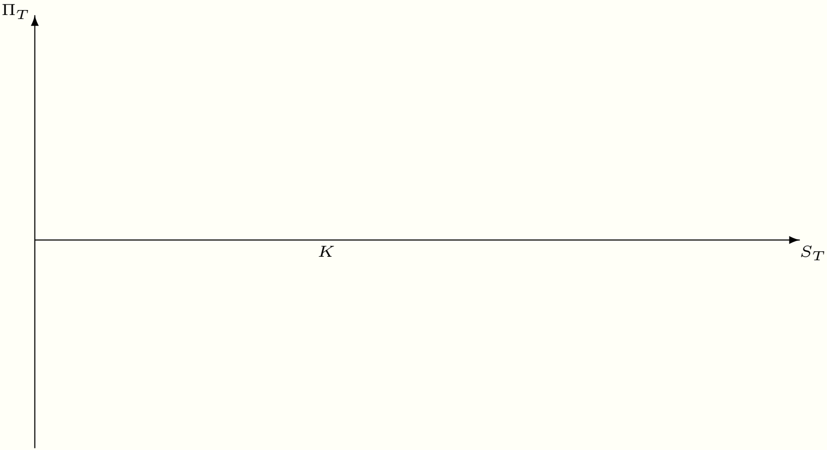

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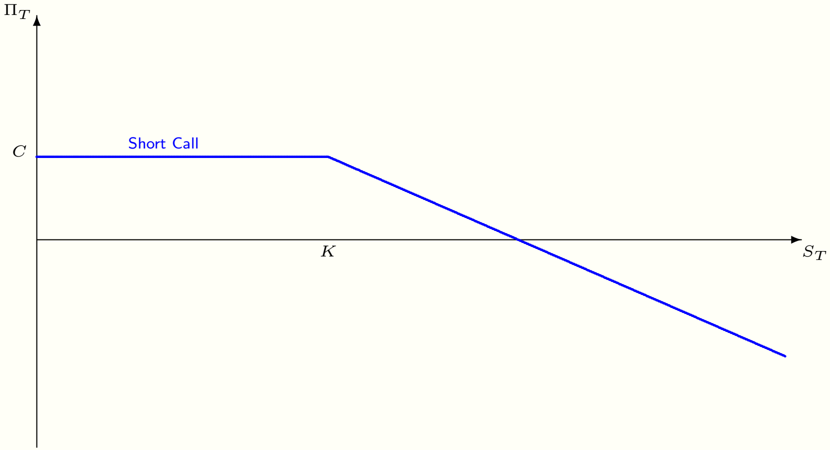

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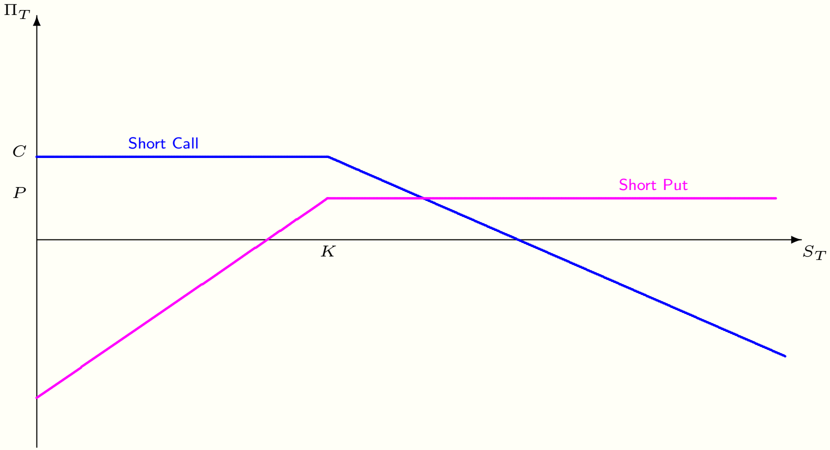

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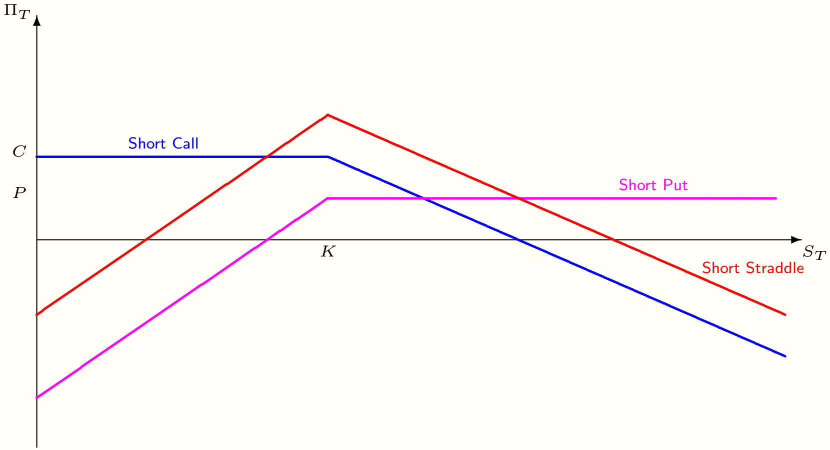

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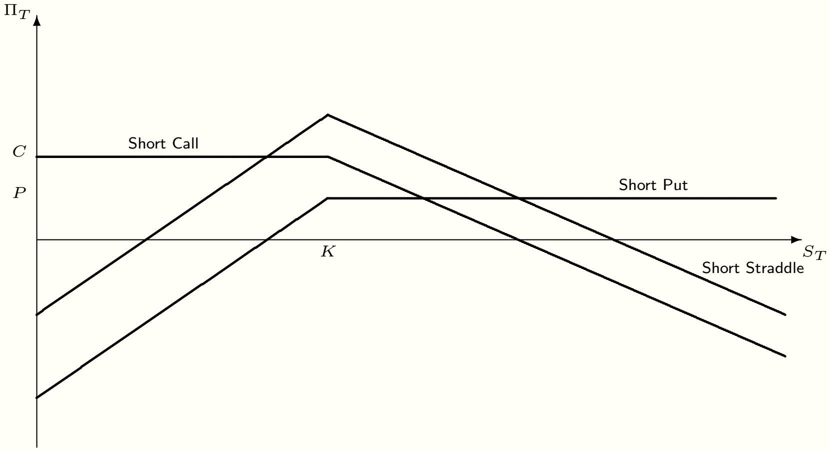

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Investing at times of low volatility

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    - In times of low volatility, returns are low and hence prices are moving less.
    - At maturity the price is therefore most likely to be close to the current value.
- Often the strike price will be the current asset value, implying that the investor believes that asset prices will not move considerably.
- If investors know which direction an asset will be moving, other investment strategies could be used, even for small movements, such as a bull or bear spread, but if they are uncertain about the direction of any movement, a short straddle might be the best choice.
- → Investors can use a short straddle to exploit the small price movements in time of low volatility. We note however, that low volatility also implies low option premia and the movements need to be very small to not outweigh the premia obtained.

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→ We can now summarise the main benefits of using option strategies.

- We have only considered a small number of option strategies here, more complex strategies exist, some involving more than two options; these option strategies allow a more refined approach to allow investors to profit from any information they may hold about the asset they invest in.
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- Another advantage of using options is that option premia are mostly a small fraction of the value of the underlying asset. This allows investors buying options to obtain a large exposure to risks, with the prospects to large profits, but also large losses.

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